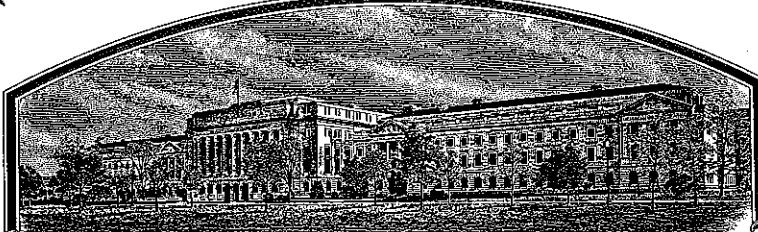


No.



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

*Enza Zaden Beheer B.V.*

Witness, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HERETO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR SELLING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSES, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED IN THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

'Durango'

In Testimony Whereof, I have hereunto set my hand  
and caused the seal of the Plant Variety  
Protection Office to be affixed at the City of  
Washington, D.C. this fifteenth day of June, in  
the year two thousand and five.

Attest:

Alvin M. Jones  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

G. M. Johnson  
Secretary of Agriculture

AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and Information Collection burden statement on reverse)

The statutory statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Applicability is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2327). Information is held confidential until certificate is issued (7 U.S.C. 2326).

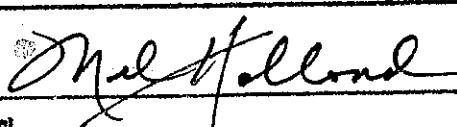
NAME OF OWNER  ENZA-ZADEN, De Enkhuzener Zaadhandel BV Enza Zaden Beheer B.V.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME  # 962A	3. VARIETY NAME  Durango
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)  Postbus 7, 1600 AA ENKHUIZEN Haling 1e, 1602 DB ENKHUIZEN The Netherlands	5. TELEPHONE (include area code) USA: 831 623-4644 NL: +31 228-315844	6. FAX (include area code) USA: 831 623-1746 NL: +31 228-315854
IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.)  corporation	8. IF INCORPORATED, GIVE STATE OF INCORPORATION  Holland	9. DATE OF INCORPORATION  1938
11. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION (This person listed will receive all papers)  Mel Holland P.O. Box 866 San Juan Bautista, CA 95045		
12. FILING AND EXAMINATION FEES  <b>FEE'S RECEIVED</b> \$ 2705 - DATE December 11, 2005  <b>CERTIFICATION FEE:</b> \$ 432.00 DATE 5-2-2005		

1. TELEPHONE (include area code) 831 623-4644	12. FAX (include area code) 831 623-1746	13. EMAIL mlholland@ix.netcom.com	14. CROP/FOOD (Common Name) Lettuce
15. GENUS AND SPECIES NAME OF CROP Lactuca sativa		16. FAMILY NAME (Botanical) Compositae	17. IS THIS VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 8(a) of the Plant Variety Protection Act. <input type="checkbox"/> YES (if "yes", attach Items 20 and 21 below) <input checked="" type="checkbox"/> NO (if "no", go to Item 22)	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Copy(s) (2,000 whole harvested seeds or, for tuber propagated varieties, sufficient live plants culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Add to the Plant Variety Protection Office)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED * NUMBER 1,2,3, etc. (If additional explanation is necessary, please use the space indicated on the reverse.)	
21. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U.S. OR OTHER COUNTRIES?		22. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDERS' RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (There are spaces indicated on reverse)	

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a living culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is/are the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is/are informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER ENZA ZADEN, 	SIGNATURE OF OWNER		
NAME (Please print or type) Mel Holland	NAME (Please print or type)		
CAPACITY OR TITLE Plant Breeder	DATE 12/07/01	CAPACITY OR TITLE	DATE

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lication form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety, at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense of it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$2,705 120 filing fee and \$2,385 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial publications will be held in the PVPO for not more than 90 days, then returned to the applicant as unified. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use inkling materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount \$320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvp.htm>

EM

- la. Give:
  - (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
  - (2) the details of subsequent stages of selection and multiplication;
  - (3) evidence of uniformity and stability; and
  - (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- lb. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
  - (1) identify these varieties and state all differences objectively;
  - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
  - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- lc. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- ld. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- le. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
- lf. If "Yes" is specified (seed of this variety be sold by variety name only, as a class of certified seed), the applicant MAY NOT reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
- lg. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
- lh. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

11. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

12. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

U.K. December 17, 2000

13. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 386, Beltsville Agricultural Research Center-East, Beltsville, MD 20705. Telephone: (301) 504-5039. <http://www.ams.usda.gov/plantseeds/ed.htm>

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0501-0059). The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 325-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5984 (voice and TDD). USDA is an equal opportunity provider and employer.

5010-04-01 (04-01) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (02-93) which is obsolete.

2

EXHIBIT A: Origin and Breeding History**Lettuce: Durango**

Durango was derived from a cross between inbred line 3X64 (female) and inbred line 3X614 (male) in 1995. The inbred line 3X64 = ((Greenlake x Salinas) x Alpha)) is a large medium green 'Salinas' iceberg type that is black seeded, corky root resistant, and has Bremia resistance genes 1, 5/8, 7. Inbred line 3X614 = ((Van Sal x Salinas) x Alpha)) x (Eldorado) is a medium sized, dark green 'Salinas' iceberg type that is brown seeded with Bremia resistance factor, R18. The breeding objective was to develop a 'Salinas' iceberg variety with corky root resistance and Bremia resistance from R18. The pedigree method of breeding was employed to achieve this objective using single plant and mass selections.

(*Rhizomonas*  
*suberifaciens*)  
A

The details of selection and multiplication used to develop 'Durango' are noted below:

- Stage 1 – The cross was made between breeding lines 3X64 and 3X614 the F1 seed was screened for Bremia resistance factor R18 and the resistant progeny were produced in the greenhouse.
- Stage 2 – The F2 seed was screened for corky root resistance. Resistant plants from the corky root Screening were saved and multiplied in the greenhouse.
- Stage 3 – Single plant selections were made in the F3 generation from plantings in commercial Production fields in the Salinas Valley with a known history of corky root. Selections Were made for larger head size, tipburn tolerance with good heading and holding Characteristics and transplanted to the greenhouse for multiplication.
- Stage 4 – A single plant in the F4 with a larger size, better holding, tipburn tolerance and weight was Selected at the company trial grounds in San Juan Bautista, California for multiplication in the greenhouse. Disease screenings for Bremia (R18) and corky root showed the single plant selection was resistant to both diseases.
- Stage 5 – The F5 generation was grown at San Juan Bautista and shown to be uniform for heading, size, tipburn tolerance and maturity. Single plant selections were made to evaluate the uniformity And stability for type in the F6.
- Stage 6- The F6 generation plants were planted in commercial production fields in the Salinas Valley with A known history of corky root disease. A progeny row from a F5 selection was observed to be stable and uniform for corky root and type. Seed was multiplied from a mass of 29 plants. All 29 plants tested resistant for corky root and Bremia resistance (R18).
- Stage 7 - Seed from the F7 mass was tested for commercial acceptance as Experimental # 962A. Testing was conducted on commercial fields in the Salinas Valley and the San Juan Bautista trial ground. The variety was found to be uniform and stable for type.
- Stage 8 – Approximately 500 plants were multiplied in Australia to produce foundation seed.
- Stage 9 – The variety was named 'Durango' and two generations of commercial seed were produced.

'Durango' lettuce has been evaluated in commercial plantings in lettuce production areas of California and Arizona. The variety 'Durango' has been observed to be stable and uniform for type over four generations of reproduction from the F6. Less dense (puffy) head variants have been observed in seed production fields at less than 0.01% and is characteristic of Salinas iceberg varieties. Corky root resistance has been stable from the F3 and Bremia (R18) resistance from the F4 through subsequent reproduction cycles.

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'Durango' can be distinguished from the parent lines as follows:

- (1) 3X64 - 'Durango' is brown seeded and has Bremia (R18) resistance.
- (2) 3X614 - 'Durango' is corky rot resistant.

**Exhibit B, Statement of Distinctness****Lettuce - 'Durango'**

'Durango' is most similar to 'Wrangler'; however, 'Durango' is brown seeded and is resistant to Bremia lactucae, California pathotype 5 conferred by R18, whereas 'Wrangler' is black seeded and lacks the R18 factor and is susceptible to Bremia lactucae, California pathotype 5.

'Durango' is most similar to 'Silverado'; however, 'Durango' has the *cor* gene and is resistant to corky root CA-I isolate, whereas 'Silverado' lacks the *cor* gene and is susceptible to corky root. Durango (931g) averages greater head weight than Silverado (800g).

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Addendum to Exhibit B:

R18 confers resistance to CAV(5) and CAVI(6) see cited references\*\*.

We have tested 91D36 isolate of *Bremia lactucae* (original source UC-Davis) on the known Downy Mildew Resistance genes/factors with the following results:

Virulent (+) on Cobham Green, DM1,2,3,5/8,6,7,10,11,12,13,14,16.

Avirulent (-) on DM4, R15, R17, R18.

*Bremia lactucae* (Downy mildew) serial assay hosts for lettuce:

DM1= 'Lednick' DM6= 'Sabine' DM13= 'Pennlake' R18= 'Colorado'

DM2= 'UCDM2' DM7= 'LSE57/15' DM14= 'UCDM14'

DM3= 'Dandie' DM10= 'UCDM10' DM15= 'PIVT 1309'

DM4= 'R4T57D' DM11= 'Capitan' DM16= 'LSE/18'

DM5/8= 'Valmaine' DM12= 'Hilde II' R17 = 'LSE-102'

\*\*References: Michelmore, R.W., et al., From the California Lettuce Research Board- Annual Report, April 1999-March 2000, p37- Isolate of *B.lactucae* C91D36- Avirulence phenotype DM/R factor 4, 15, 18.

From the California Lettuce Research Board- Annual Report, April 2001- March 2002, p.56. CAVA- avirulence phenotypes 4, 17, 18c, 37, 38. Leaky response- 18M, 18Ed, 32 CAVB- avirulence phenotypes 4, 17, 18, 37. Leaky response- R36.

**Corky Root Data****200200046****Greenhouse Screenings for Corky Root Resistance- CA-1 isolate****Table 1: Commercial Production 2000-Tested 10/00**

	<u>Variety</u>	<u>Susceptible</u>	<u>Resistant</u>	<u>Total # Plants</u>
Rep 1	Durango	0	24	24
	Silverado	24	0	24
	Wrangler	0	24	24
Rep 2	Durango	0	24	24
	Silverado	24	0	24
	Wrangler	0	24	24
Rep 3	Durango	0	24	24
	Silverado	24	0	24
	Wrangler	0	24	24

**Table 2: Commercial Production 2001- Tested 10/01**

	<u>Variety</u>	<u>Susceptible</u>	<u>Resistant</u>	<u>Total # Plants</u>
Rep 1	Durango	0	24	24
	Silverado	24	0	24
	Wrangler	0	24	24
Rep 2	Durango	0	24	24
	Silverado	24	0	24
	Wrangler	0	24	24
Rep 3	Durango	0	24	24
	Silverado	24	0	24
	Wrangler	0	24	24

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**Greenhouse Screenings for *Bremia lactucae* Resistance- 91D36 isolate\***

**Table 1: Commercial Production 2000-Tested 10/00**

	<u>Variety</u>	<u>Susceptible</u>	<u>Resistant</u>	<u>Total # Plants</u>
Rep 1	Durango	0	24	24
	Silverado	0	24	24
	Wrangler	24	0	24
Rep 2	Durango	0	24	24
	Silverado	0	24	24
	Wrangler	24	0	24
Rep 3	Durango	0	24	24
	Silverado	0	24	24
	Wrangler	24	0	24

**Table 2: Commercial Production 2001- Tested 10/01**

	<u>Variety</u>	<u>Susceptible</u>	<u>Resistant</u>	<u>Total # Plants</u>
Rep 1	Durango	0	24	24
	Silverado	0	24	24
	Wrangler	24	0	24
Rep 2	Durango	0	24	24
	Silverado	0	24	24
	Wrangler	24	0	24
Rep 3	Durango	0	24	24
	Silverado	0	24	24
	Wrangler	24	0	24

\* 91D36 isolate of *Bremia lactucae* resistance is conferred by DM4, 15 and R18

\*\* R18 confers resistance to the CA 1, 2A, 2B, 3, and 4 pathotypes of *Bremia lactucae*

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4/11/05

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DM/R nr sextet nr sextet value	○ Cobham Green 1 - 1 - Lednický	1 - 1 - Lednický	2	2	4	4	8	4	4	16	5/8	5	32	7 - 7 LSE 57/15
<b>California Bremia Isolates</b>														
CA I	+	+	-	-	-	-	-	-	-	-	-	+	+	+
CA 2a	+	+	-	-	-	-	-	-	-	-	-	+	+	+
CA 2b	+	+	-	-	-	-	-	-	-	-	-	+	+	+
CA III	+	-	-	-	-	-	-	-	-	-	-	+	+	+
CA IV	+	-	-	-	-	-	-	-	-	-	-	+	+	+
CA V	+	-	-	-	-	-	-	-	-	-	-	+	+	+
CA VI	+	-	-	-	-	-	-	-	-	-	-	+	+	+
CA VII	+	-	-	-	-	-	-	-	-	-	-	+	+	+
CA VIII	+	-	-	-	-	-	-	-	-	-	-	+	+	+

(-) = Avirulence reaction

(+) = Virulent reaction

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+ + + + + - + + N  $\infty$  UCDM10

+ + + + - + + 4  $\infty$  Capitan

+ + + + + + + 8  $\infty$  Hilde II

+ + + + + + + 16  $\infty$  Pennlake

+ + + + + + + 32  $\infty$  UCDM14

+ + + + + + - 1  $\infty$  PIVT1309

+ + + + + - - 2  $\infty$  LSE/18

- - - - - - - 4  $\infty$  LS-102

+ - - - - - -  $\infty$   $\infty$  Colorado

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Ninja

Discovery 37  
18  
32

Argelès 1938

Sextet Block 1

Sextet Block 2

Sextet Block 3

Sextet Block 4

37  
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## 4. MATURE LEAVES (observe harvest-mature outer leaves):

NOTE: Provide color photo of harvest-mature leaves which accurately shows color and margin characteristics.

## MARGIN:

<input type="checkbox"/> 2	INCISION DEPTH: (deepest penetration of the margin)	1-Absent/Shallow (Dark Green Boston)    2-Moderate (Vanguard)	3-Deep (Great Lakes 6)
<input type="checkbox"/> 4	INDENTATION: (finest divisions of the margin)	1-Entire (Dark Green Boston) 2-Shallowly Dentate (Great Lakes 65)	3-Dearly Dentate (Great Lakes 659) 4-Crenate (Vanguard)
<input type="checkbox"/> 2	UNDULATION OF THE APICAL MARGIN:	1-Absent/Slight (Dark Green Boston) 2-Moderate (Vanguard)	3-Strong (Great Lakes 6)
<input type="checkbox"/> 4	GREEN COLOR:	1-Very Light Green (Bibb) 2-Light Green (Minetto)	3-Medium Green (Great Lakes) 4-Dark Green (Vanguard)
ANTHOCYANIN (grown at or below 10°C):			
<input type="checkbox"/> 1	DISTRIBUTION:	1-Absent 2-Margin Only (Big Boston)	3-Spotted (Calif. Cream Butter) 4-Throughout (Prize Head)
<input type="checkbox"/> 1	CONCENTRATION:	1-Light (Iceberg)	2-Moderate (Prize Head)
<input type="checkbox"/> 3	SIZE:	1-Small	2-Medium
<input type="checkbox"/> 2	GLOSSINESS:	1-Dull (Vanguard)	2-Moderate (Salinas)
<input type="checkbox"/> 1	BLISTERING:	1-Absent/Slight (Salinas)	2-Moderate (Vanguard)
<input type="checkbox"/> 2	LEAF THICKNESS:	1-Thin	2-Intermediate
<input type="checkbox"/> 1	TRICHOMES:	1-Absent (smooth)	2-Present (spiny)

## 5. PLANT (at market stage). Choose a comparison variety appropriate for this type.:

## SPREAD OF FRAME LEAVES:

 4  2 cm This Variety  3  9 cm Silverado (specify comparison variety) 1  6 cm This Variety  1  6 cm Silverado (specify comparison variety) 2 HEAD SHAPE: 1-Flattened    2-Slightly Flattened    3-Spherical    4-Elongate    5-Non-Heading  
6-OTHER 3 HEAD SIZE CLASS: 1-Small    2-Medium    3-Large 2  4 HEAD COUNT PER CARTON 9  3  1 g This Variety  8  0  0 g Silverado (specify comparison variety) 3 HEAD FIRMNESS: 1-Loose    2-Moderate    3-Firm    4-Very Firm

## 6. BUTT (bottom of market-trimmed head):

 2 SHAPE: 1-Slightly Concave    2-Flat    3-Rounded 1 MIDRIB: 1-Flattened (Salinas)    2-Moderately Raised    3-Prominently Raised (Great Lakes 65)

## 7. CORE (stem of market-trimmed head):

 3  6 mm Diameter at base of head 4  4 Ratio of head diameter/core diameter 4  1 Core height from base of head to apex:  
mm This Variety  3  9 mm Silverado (specify comparison variety)

## 8. BOLTING (Give First Water Date 4-23-01): NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

 7  6 Number of days from First Water Date to seed stalk emergence (summer conditions):  
This Variety  7  2 Silverado (specify comparison variety) 3 BOLTING CLASS: 1-Very Slow    2-Slow    3-Medium    4-Rapid    5-Very Rapid 1  1  3 Height of mature seed stalk:  
cm This Variety  1  1  1 cm Silverado (specify comparison variety)

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Spread of Bolter Plant (at widest point):  
cm This Variety

3 9 cm

Silverado

(specify comparison variety)

 4  2

BOLTER LEAVES:

1-Straight

2-Curved

 1

MARGIN:

1-Entire

2-Dentate

 1

COLOR:

1-Light Green

2-Medium Green

3-Dark Green

 3

BOLTER HABIT:

 2

TERMINAL INFLORESCENCE:

1-Absent

2-Present

 1LATERAL SHOOTS:  
(above head)

1-Absent

2-Present

 1

BASAL SIDE SHOOTS:

1-Absent

2-Present

## 9. MATURITY (earliness of harvest-mature head formation):

NOTE: Complete this section for at least one season.

SEASON	Appl. 1/ # of days	Check 1/ # of days	CHECK VARIETY 2/
			Silverado
Spring	<input type="checkbox"/> 7 5	<input type="checkbox"/> 8 4	Silverado
Summer	<input type="checkbox"/> 6 5	<input type="checkbox"/> 7 0	Silverado
Fall	<input type="checkbox"/> 6 7	<input type="checkbox"/> 7 5	Silverado
Winter	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

Give planting date(s), and location(s):

Spring

February 15, 2001 Salinas, CA

Summer

June 10, 2001 San Juan Bautista, CA

Fall

July 26, 2001 San Juan Bautista, CA

Winter

1/ First water date to harvest.

2/ Fill in check variety name on the appropriate line.

## 10. ADAPTATION:

PRIMARY REGIONS OF ADAPTION (tested and proven adapted):

(0=Not tested

1=Not Adapted

2=Adapted)

 2

Southwest (Calif., Ariz. desert)

 2

West Coast

 0

Northeast

 0

Northcentral

 0

Southeast

OTHER

SEASON:

 2 Spring (area) West Coast/Southwest 2

Fall (area) West Coast

 2 Summer (area) West Coast 2

Winter (area) Southwest

 0

GREENHOUSE:

0=Not tested

1=Not Adapted

2=Adapted

 1

SOIL TYPE:

1=Mineral

2=Organic

3=Both

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## 11. DISEASES AND STRESS REACTIONS (0=Not tested; 1=Susceptible; 2=Intermediate; 3=Resistant; 4=Highly resistant; 5=Tolerant):

VIRUS

- 2 Big Vein  
 1 Lettuce Mosaic  
 0 Cucumber Mosaic  
 0 Broad Bean Wilt  
 0 Turnip Mosaic  
 0 Beet Western Yellows  
 0 Lett. Infectious Yellows  
 0 Other Virus \_\_\_\_\_

FUNGAL/BACTERIAL

- 3 Corky Root Rot (Pythium Root Rot)  
 3 Downy Mildew (Races CA-1, 2, 3, 4, 5)  
 0 Powdery Mildew  
 0 Sclerotinia Rot  
 0 Bacterial Soft Rot (Pseudomonas spp. & others)  
 0 Botrytis (Gray Mold)  
 0 OTHER \_\_\_\_\_

INSECTS

- 0 Cabbage Loopers  
 0 Root Aphids  
 1 Green Peach Aphid  
 0 Other Insect \_\_\_\_\_

PHYSIOLOGICAL/STRESS

- 5 Tipburn       0 Salt  
 5 Heat       5 Brown Rib (Rib Discoloration, Rib Blight)  
 0 Drought       0 OTHER \_\_\_\_\_  
 0 Cold

POST HARVEST

- 5 Pink Rib  
 0 Russet Spotting  
 0 Rusty Brown Discoloration

- 5 Internal Rib Necrosis (Blackheart, Gray Rib, Gray Streak)  
 0 Brown Stain

## 12. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:

## 13. COMMENTS:

Tested for Bremia resistance factor 18 using pathotype 91D36\* and observed to be resistant.

Tested for Corky Root resistance using CA-1 isolate\*\*

\*Bremia lactucae pathotype 91D36 from UC Davis

\*\* Corky Root isolate from UC Davis

SUGGESTED CHECK VARIETIESTYPE

- 1) CUTTING/LEAF
- 2) BUTTERHEAD
- 3) BIBB
- 4) COS, OR ROMAINE
- 5) GREAT LAKES GROUP
- 6) VANGUARD GROUP
- 7) IMPERIAL GROUP
- 8) EASTERN GROUP
- 9) STEM
- 10) LATIN

CHECK VARIETY

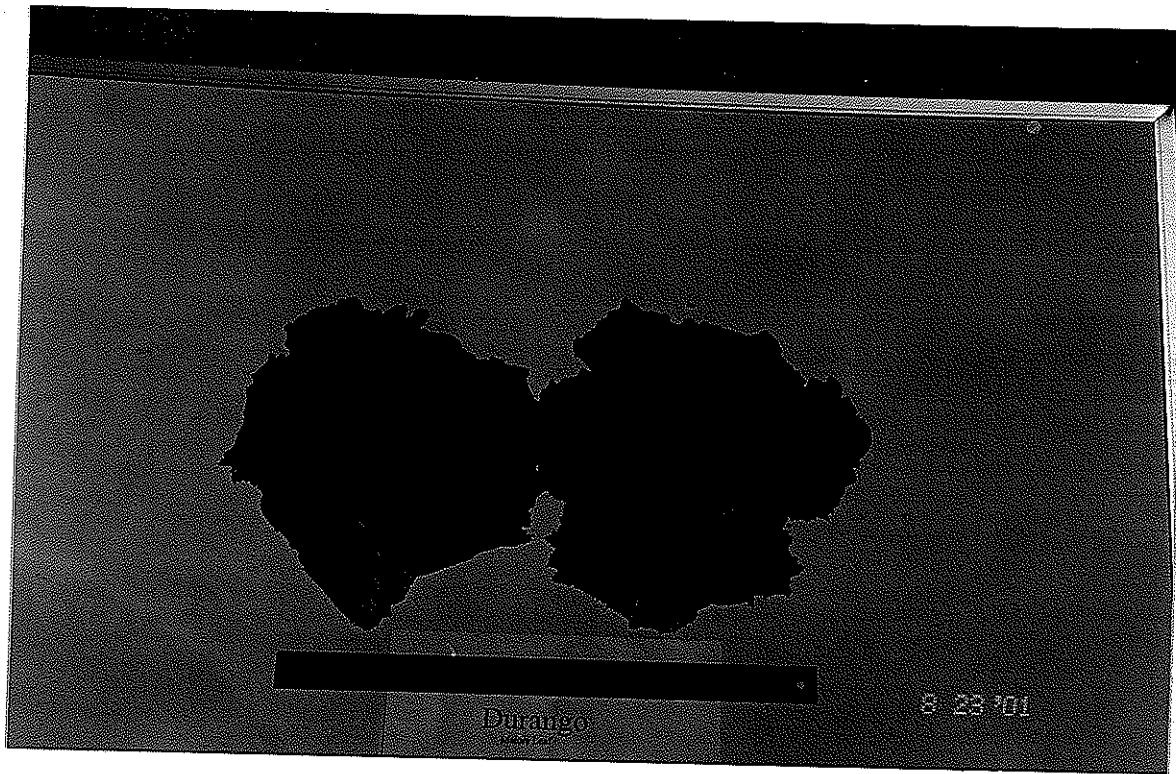
- SALAD BOWL  
DARK GREEN BOSTON  
BIBB  
PARRIS ISLAND  
GREAT LAKES 659-700  
VANGUARD  
VIVA  
ITHACA  
CELTUCE  
MATCHLESS

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Durango: Fourth True Leaf of 20 day Old Seedling

200200046



**Lettuce: Mature leaf from 'Durango'**

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Durango PVP trials: summary of means

Count	Trial #1 48	Trial#2 72	Trial#3 60	Trial#4 69	Production Trial 30
<b>Core Diameter (mm)</b>					
Durango	37.3	38.4	34.8	33.1	
Wrangler	37.5 ns	37.3 *	35.9 **	32.4 *	
Silverado	34.9 ***	35.4 ***	31.2 ***	29.6 ***	
Diamond	35.4 ***	36.1 ***	32.9 ***	29.6 ***	
<b>Head Diameter (cm)</b>					
Durango	16.7	16.3	16.1	15.7	
Wrangler	17.0 ns	15.9 **	16.0 ns	15.7 ns	
Silverado	16.5 ns	15.6 ***	15.1 ***	15.5 ns	
Diamond	16.9 ns	15.9 **	15.3 ***	15.8 ns	
<b>Core Length (mm)</b>					
Durango	38.8	42.1	34.8	47.3	
Wrangler	37.8 ns	43.1 ns	36.0 ns	42.6 ***	
Silverado	42.1 *	42.5 ns	31.6 ***	38.7 ***	
Diamond	42.5 *	44.8 ns	35.1 ns	40.6 ***	
<b>Head Height (cm)</b>					
Durango	13.9	15	15	15.7	
Wrangler	14.4 ***	15.4 **	15.4 **	15.4 **	
Silverado	14.6 ***	14.9 ns	14.7 **	15.3 ***	
Diamond	14.5 ***	14.8 ns	14.8 *	15.2 ***	
<b>Head Weight (g)</b>					
Durango	787.5	899.2	1060.5	976.4	
Wrangler	752.9 ns	786.2 ***	993.0 ***	883.7 ***	
Silverado	712.6 ***	739.8 ***	928.5 ***	819.5 ***	
Diamond	733.2 **	757.1 ***	973.4 ***	822.4 ***	
<b>Frame Width (cm)</b>					
Durango	52.8	53.3	53.4	53.3	
Wrangler	49.3 ***	49.8 ***	52.2 ***	52.0 ***	
Silverado	47.5 ***	49.6 ***	47.1 ***	51.6 ***	
Diamond	48.0 ***	50.0 ***	47.0 ***	53.1 ns	
<b>Seedstalk Height (cm)</b>					
Durango				113.1	
Silverado				111.9 ns	
<b>Frame Spread (cm)</b>					
Durango				41.8	
Silverado				39.3 ***	

Legend: ns = Means not significantly different

\* = 90% confidence that means are significantly different

\*\* = 95% confidence that means are significantly different

\*\*\* = 99% confidence that means are significantly different

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Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00

Head Weight (g)

	Wrangler	Durango	Silverado	Diamond
rep 1	884	840.5	770.5	658
	826	797.5	693	678.5
	957	932.5	903.5	650
	920	753	800	682
	695	668.5	744.5	702.5
	866	848.5	804	785
	914.5	769	800	770
	834.5	879.5	658	800
	795	872	944	763.5
	810	638.5	779.5	704.5
	846.5	752	795.5	681.5
	864	654	755.5	629
	811	595.5	714	818
	743.5	720	771	708
	687	913.5	597	651.5
	614	644.5	645	727.5
	725.5	810	560.5	640
	584.5	723	638.5	662
	300	1014.5	770.5	691
	890.5	667	751.5	800.5
	672.5	636.5	580	683.5
	645	739	707.5	690.5
	834.5	647	692.5	768
	642	933.5	731	741
rep 2	796.5	648	770.5	990
	767.5	1127	775.5	671
	571.5	671	580	531
	546	848.5	747	756.5
	709.5	773	832.5	960
	795	733	602.5	706.5
	741	781.5	608.5	845
	773	726.5	800	702.5
	727.5	967	880	735
	729	1000.5	620	774.5
	718.5	1024	821.5	677
	678.5	704	813	649
	588	713.5	666	727.5
	869.5	618	648	554
	751	834	746.5	665.5
	681.5	857	735.5	778.5
	801.5	886	542.5	698
	907	599	580	875
	584	904	687.5	711.5
	727.5	715.5	684.5	781
	994	787	628.5	658
	703.5	836.5	626.5	922
	829.5	944.5	664.5	800
	785	650	540	940

	Wrangler	Durango	Silverado	Diamond
Mean	752.875	787.4688	712.6458	733.2292
Standard Error	18.14896	18.42054	13.96226	13.6975
Median	759.25	771	722.5	707.25
Mode	834.5	848.5	770.5	658
Standard Deviation	125.7397	127.6213	96.7334	94.89905
Sample Variance	15810.46	16287.19	9357.351	9005.829
Kurtosis	2.282122	-0.33168	-0.52086	0.972333
Skewness	-0.90783	0.53785	0.120435	0.777742
Range	694	531.5	404	459
Minimum	300	595.5	540	531
Maximum	994	1127	944	990
Sum	36138	37798.5	34207	35195
Count	48	48	48	48

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Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00

Head Weight (g)

## Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<u>rep 1</u>					
Count	24	24	24	24	96
Sum	18362.5	18449.5	17607	17086	71505
Average	765.1042	768.7292	733.625	711.9167	744.8438
Variance	20909.35	13323.93	8570.549	3139.058	11676.54
<u>rep 2</u>					
Count	24	24	24	24	96
Sum	17775.5	19349	16600	18109	71833.5
Average	740.6458	806.2083	691.6667	754.5417	748.2656
Variance	11086.88	19225.69	9632.471	14316.22	14819.02
<u>Total</u>					
Count	48	48	48	48	
Sum	36138	37798.5	34207	35195	
Average	752.875	787.4688	712.6458	733.2292	
Variance	15810.46	16287.19	9357.351	9005.829	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	562.043	1	562.043	0.044872	0.832474	3.892495
Varieties	145981.8	3	48660.59	3.884916	0.010064	2.653692
Interaction	66401.44	3	22133.81	1.767098	0.15501	2.653692
Within	2304695	184	12525.52			
Total	2517641	191				

## Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
<u>rep 1</u>			
Count	24	24	48
Sum	18362.5	18449.5	36812
Average	765.1042	768.7292	766.9167
Variance	20909.35	13323.93	16755.81
<u>rep 2</u>			
Count	24	24	48
Sum	17775.5	19349	37124.5
Average	740.6458	806.2083	773.4271
Variance	11086.88	19225.69	15931.29
<u>Total</u>			
Count	48	48	
Sum	36138	37798.5	
Average	752.875	787.4688	
Variance	15810.46	16287.19	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	1017.253	1	1017.253	0.063041	0.802313	3.944535
Varieties	28721.46	1	28721.46	1.77991	0.185453	3.944535
Interaction	23017.52	1	23017.52	1.426429	0.235418	3.944535
Within	1484555	92	16136.46			
Total	1537311	95				

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Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00  
Head Weight (g)

## Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>Rep1</i>			
Count	24	24	48
Sum	18449.5	17607	36056.5
Average	768.7292	733.625	751.1771
Variance	13323.93	8570.549	11028.95
<i>Rep2</i>			
Count	24	24	48
Sum	19349	16600	35949
Average	806.2083	691.6667	748.9375
Variance	19225.69	9632.471	17471.82
<i>Total</i>			
Count	48	48	
Sum	37798.5	34207	
Average	787.4688	712.6458	
Variance	16287.19	9357.351	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	120.3776	1	120.3776	0.009487	0.922618	3.944535
Varieties	134363.3	1	134363.3	10.58965	0.001592	3.944535
Interaction	37861.9	1	37861.9	2.984033	0.087445	3.944535
Within	1167311	92	12688.16			
Total	1339656	95				

## Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
<i>Rep1</i>			
Count	24	24	48
Sum	17086	18449.5	35535.5
Average	711.9167	768.7292	740.3229
Variance	3139.058	13323.93	8880.441
<i>Rep2</i>			
Count	24	24	48
Sum	18109	19349	37458
Average	754.5417	806.2083	780.375
Variance	14316.22	19225.69	17095.69
<i>Total</i>			
Count	48	48	
Sum	35195	37798.5	
Average	733.2292	787.4688	
Variance	9005.829	16287.19	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	38500.07	1	38500.07	3.079703	0.082604	3.944535
Varieties	70606.38	1	70606.38	5.647957	0.019548	3.944535
Interaction	158.8776	1	158.8776	0.012709	0.910487	3.944535
Within	1150113	92	12501.23			
Total	1259378	95				

**Trial #2 Wilder Lot19, Salinas, California, Evaluated 09/13/00**

Head Weight (g)

	Wrangler	Durango	Silverado	Diamond
Rep 1	917.5	1220	903	638
	866	976.5	678	808
	821	988.5	583	829
	773	995.5	776	761.5
	793.5	1030	739	938.5
	906	1093	755	1076
	660	1038	582	780
	860	1099	785.5	701
	618.5	1088.5	654	1074
	767.5	1018	615.5	958.5
	718.5	853	593	580
	741.5	784.5	958	766
	715.5	1015.5	785	680
	835	985	876	808
	742.5	757	720	672
	655	1050	537	800
	1035	991	795	916
	777	856.5	758	750
	905	1094	932	692
	897.5	923	857	489.5
	832	841	670	903
	696	865	643	782
	1033.5	800	493	782
	860	739	844	650
Rep 2	767	813	740.5	909.5
	823.5	1058	689	740
	806.5	797	702.5	960
	720	810	864.5	899.5
	762.5	1001	692.5	832
	749.5	1067	765	506
	709	663	663.5	715.5
	892	824	877	777.5
	863	824	716	845
	669	1054	667	674
	702	799	760.5	708.5
	773	793	898.5	690.5
	945	924	598.5	740
	723	819	977	846
	812	856.5	961.5	799
	801	1130	720.5	788
	693	806	839.5	634
	677	893	647.5	780.5
	944.5	1195.5	857.5	685
	813	1020	814	621.5
	840	1020	757.5	739
	951	942	800	817.5
	680	1070	822	910
	722	834	535	863.5
rep 3	736	680	783	684.5
	784.5	769.5	718.5	747
	675	838	715	772
	707.5	865	687.5	622.5
	651.5	716.5	788.5	830.5
	821	820	686.5	700
	883	830.5	818.5	667
	774	983.5	702	645
	841.5	714	618	650.5
	674	839.5	886	631.5
	935.5	885.5	878	600
	671	685.5	745	687.5
	697	757	625.5	713.5
	651	865	848.5	777
	861.5	628	686	753
	806.5	985	775.5	648.5

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592.5	497.5	552	826.5
775.5	680.5	674	793
892	898	849.5	670.5
810	935.5	685	690
791.5	888.5	737	806
628.5	987.5	822.5	643
735	1011	528	785.5
948.5	870	753	847.5

	Wrangler	Durango	Silverado	Diamond
Mean	786.2431	899.2431	739.75	757.0694
Standard Error	11.69215	16.67846	13.10529	13.3993
Median	776.25	877.75	739.75	757.25
Mode	821	865	#N/A	808
Standard Deviation	99.21115	141.5214	111.2021	113.6968
Sample Variance	9842.852	20028.31	12365.9	12926.96
Kurtosis	-0.34958	-0.12062	-0.44041	0.639608
Skewness	0.362466	-0.12015	-0.00265	0.419593
Range	442.5	722.5	484	586.5
Minimum	592.5	497.5	493	489.5
Maximum	1035	1220	977	1076
Sum	56609.5	64745.5	53262	54509
Count	72	72	72	72

**Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00**

Head Weight (g)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>Rep 1</i>					
Count	24	24	24	24	96
Sum	19427	23101.5	17532	18835	78895.5
Average	809.4583	962.5625	730.5	784.7917	821.8281
Variance	11942.19	15719.4	16332.5	20305.61	23063.3
<i>Rep 2</i>					
Count	24	24	24	24	96
Sum	18838.5	22013	18387	18482	77700.5
Average	784.9375	917.2083	765.2917	770.0833	809.3802
Variance	7583.224	18142.02	12136.24	11392.36	15894.06
<i>Rep 3</i>					
Count	24	24	24	24	96
Sum	18344	19631	17363	17192	72530
Average	764.3333	817.9583	723.4583	716.3333	755.5208
Variance	9793.971	16550.17	8657.281	5496.754	11456.97
<i>Total</i>					
Count	72	72	72	72	
Sum	56609.5	64745.5	53262	54509	
Average	786.2431	899.2431	739.75	757.0694	
Variance	9842.852	20028.31	12365.9	12926.96	

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	238478.1	2	119239	9.288234	0.000125	3.028489
Varieties	1111195	3	370398.2	28.85251	2.94E-16	2.637307
Interaction	134978	6	22496.33	1.752373	0.109038	2.1315
Within	3543190	276	12837.64			
Total	5027840	287				

Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00

Head Weight (g)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
---------	----------	---------	-------

*Rep 1*

Count	24	24	48
Sum	19427	23101.5	42528.5
Average	809.4583	962.5625	886.0104
Variance	11942.19	15719.4	19521.43

*Rep 2*

Count	24	24	48
Sum	18838.5	22013	40851.5
Average	784.9375	917.2083	851.0729
Variance	7583.224	18142.02	17055.9

*Rep 3*

Count	24	24	48
Sum	18344	19631	37975
Average	764.3333	817.9583	791.1458
Variance	9793.971	16550.17	13626.02

*Total*

Count	72	72	
Sum	56609.5	64745.5	
Average	786.2431	899.2431	
Variance	9842.852	20028.31	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	220978.8	2	110489.4	8.314664	0.00039	3.061714
Varieties	459684	1	459684	34.59263	2.92E-08	3.909733
Interaction	66061.2	2	33030.6	2.485654	0.086993	3.061714
Within	1833813	138	13288.5			
Total	2580536	143				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
---------	---------	-----------	-------

*Rep1*

Count	24	24	48
Sum	23101.5	17532	40633.5
Average	962.5625	730.5	846.5313
Variance	15719.4	16332.5	29434.67

*Rep2*

Count	24	24	48
Sum	22013	18367	40380
Average	917.2083	765.2917	841.25
Variance	18142.02	12136.24	20709.45

*Rep3*

Count	24	24	48
Sum	19631	17363	36994
Average	817.9583	723.4583	770.7083
Variance	16550.17	8657.281	14615.63

*Total*

Count	72	72	
Sum	64745.5	53262	
Average	899.2431	739.75	
Variance	20028.31	12365.9	

Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00

Head Weight (g)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit.
Reps	172050.1	2	86025.06	5.896327	0.00349	3.061714
Varieties	915769.3	1	915769.3	62.76863	6.96E-13	3.909733
Interaction	114573.9	2	57286.94	3.92656	0.021952	3.061714
Within	2013365	138	14589.6			
Total	3215758	143				

Anova: Two-Factor With Replication

## SUMMARY      Diamond      Durango      Total

## Rep1

Count	24	24	48
Sum	18835	23101.5	41936.5
Average	784.7917	962.5625	873.6771
Variance	20305.61	15719.4	25697.97

## Rep2

Count	24	24	48
Sum	18482	22013	40495
Average	770.0833	917.2083	843.6458
Variance	11392.36	18142.02	19979.57

## Rep3

Count	24	24	48
Sum	17192	19631	36823
Average	716.3333	817.9583	767.1458
Variance	5496.754	16550.17	13425.77

## Total

Count	72	72
Sum	54509	64745.5
Average	757.0694	899.2431
Variance	12926.96	20028.31

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit.
Reps	289648.5	2	144824.3	9.918755	9.44E-05	3.061714
Varieties	727680.1	1	727680.1	49.83751	7.44E-11	3.909733
Interaction	35230.42	2	17615.21	1.206434	0.302399	3.061714
Within	2014945	138	14601.05			
Total	3067504	143				

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Head Weight (g)

	Wrangler	Durango	Silverado	Diamond
rep1	762.5	961	915	829
	865	928	783.5	860
	1031.5	682.5	776	697.5
	1267.5	1241.5	863	840.5
	1205.5	724	853.5	975
	983.5	831	988.5	945.5
	765.5	986	1000	958.5
	627	863	881.5	1061.5
	1134.5	1033.5	953.5	892.5
	1129.5	1076	1056	866.5
	908	821.5	781	919.5
	936	910	904	1071.5
	906.5	1239	824	1005.5
	857	1183.5	1182.5	895.5
	964	1153.5	848	921.5
	880	915	943.5	1100
	970	1044	744	871.5
	1040	1274	962	898.5
	1097	1178.5	1094.5	1032
rep2	926.5	1188.5	762.5	844.5
	980.5	864.5	898	880.5
	1006	975	900	874
	842.5	834	882	981
	1043.5	1248.5	1097	1060
	840	1087.5	965	1065.5
	1019.5	1220	886	1173.5
	1023	1107.5	882.5	1025
	888.5	1128	879	959
	960.5	1022	847.5	884.5
	1157	992	878	1091.5
	970.5	1034	1077	1031.5
	974	1192.5	912	831.5
	989.5	1093.5	965.5	1158
	806.5	1204.5	1050	987
	920.5	1170.5	908	1055.5
	1175	1012	773	1016
	1136.5	1332.5	862.5	1220.5
rep3	1009.5	1021	944	950
	1010	1005.5	1077	1170.5
	934.5	1082	791.5	862
	984.5	949	902	957.5
	817	1205	1035	1007
	1041	1090	881	936.5
	1078	1070.5	944.5	1102.5
	1010	1174.5	991.5	785.5
	1128	1034	950	922.5
	874.5	1043	909.5	803.5
	1023.5	1178.5	957.5	903
	782.5	930	966.5	1031.5
	1055	1101.5	1084.5	704
	788	1204	912.5	885
	1059	1037	735.5	965.5
	1168.5	1200	826	1161
	1108.5	986.5	1220	988
	1163	1290.5	989	1102.5
	1258.5	1309.5	951.5	1228
	1124	1168.5	827.5	1056
	1077.5	894.5	984	1105
	1019	945	1065.5	1016.5
	1084	956	992.5	979.5

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00  
 Head Weight (g)

	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	
Mean	992.975	1060.475	928.4667	973.4	
Standard Error	16.97517	18.848	13.60499	15.26615	
Median	1007.75	1057.25	912.25	970.25	
Mode	1010	1178.5	1077	1031.5	
Standard Deviation	131.4891	145.996	105.3838	118.2511	
Sample Variance	17289.38	21314.83	11105.75	13983.33	
Kurtosis	0.003518	-0.28766	0.161036	-0.20725	
Skewness	-0.25596	-0.3441	0.447272	0.026621	
Range	640.5	650	484.5	530.5	
Minimum	627	682.5	735.5	697.5	
Maximum	1267.5	1332.5	1220	1228	
Sum	59578.5	63628.5	55708	58404	
Count	60	60	60	60	

## Anova: Two-Factor With Replication

SUMMARY	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	Total
<i>rep1</i>					
Count	20	20	20	20	80
Sum	19247	20234	18106.5	18486.5	76074
Average	962.35	1011.7	905.325	924.325	950.925
Variance	24624.74	31560.27	14085.38	9497.665	20858.41
<i>rep2</i>					
Count	20	20	20	20	80
Sum	19687.5	21627	18475.5	20277	80067
Average	984.375	1081.35	923.775	1013.85	1000.838
Variance	9817.865	15590.63	8270.539	12935.79	14467.17
<i>rep3</i>					
Count	20	20	20	20	80
Sum	20644	21767.5	19126	19640.5	81178
Average	1032.2	1088.375	956.3	982.025	1014.725
Variance	16560.8	15254.97	10728.01	16652.72	16822.57
<i>Total</i>					
Count	60	60	60	60	
Sum	59578.5	63628.5	55708	58404	
Average	992.975	1060.475	928.4667	973.4	
Variance	17289.38	21314.83	11105.75	13983.33	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	180121.6	2	90060.8	5.823544	0.003415	3.035439
Varieties	541920.2	3	180640.1	11.68061	3.79E-07	2.644192
Interaction	51774.77	6	8629.129	0.55798	0.76347	2.138492
Within	3526008	228	15464.95			
Total	4299825	239				

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Head Weight (g)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
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*rep1*

Count	20	20	40
Sum	19247	20234	39481
Average	962.35	1011.7	987.025
Variance	24624.74	31560.27	27996.65

*rep2*

Count	20	20	40
Sum	19687.5	21627	41314.5
Average	984.375	1081.35	1032.863
Variance	9817.865	15590.63	14789.82

*rep3*

Count	20	20	40
Sum	20644	21767.5	42411.5
Average	1032.2	1088.375	1060.288
Variance	16560.8	15254.97	16309.13

*Total*

Count	60	60
Sum	59578.5	63628.5
Average	992.975	1060.475
Variance	17289.38	21314.83

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	109608	2	54804.01	2.899446	0.059124	3.075854
Varieties	136687.5	1	136687.5	7.231551	0.008238	3.924328
Interaction	13264.54	2	6632.269	0.350885	0.704822	3.075854
Within	2154776	114	18901.55			
Total	2414336	119				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total	Total
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*Rep1*

Count	20	20	40
Sum	20234	18108.5	38340.5
Average	1011.7	905.325	958.5125
Variance	31560.27	14085.38	25139.07

*Rep2*

Count	20	20	40
Sum	21627	18475.5	40102.5
Average	1081.35	923.775	1002.563
Variance	15590.63	8270.539	17991.31

*Rep3*

Count	20	20	40
Sum	21767.5	19126	40893.5
Average	1088.375	956.3	1022.338
Variance	15254.97	10728.01	17131.15

*Total*

Count	60	60
Sum	63628.5	55708
Average	1060.475	928.4667
Variance	21314.83	11105.75

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Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Head Weight (g)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	85401.12	2	42700.56	2.683044	0.072671	3.075854
Varieties	522786	1	522786	32.8487	8.27E-08	3.924328
Interaction	13107.27	2	6553.633	0.411791	0.663444	3.075854
Within	1814306	114	15914.97			
Total	2435601	119				

## Anova: Two-Factor With Replication

## SUMMARY

Rep1

	Diamond	Durango	Total
Count	20	20	40
Sum	18486.5	20234	38720.5
Average	924.325	1011.7	968.0125
Variance	9497.665	31560.27	21960.12

Rep2

	Diamond	Durango	Total
Count	20	20	40
Sum	20277	21627	41904
Average	1013.85	1081.35	1047.6
Variance	12935.79	15590.63	15065.76

Rep3

	Diamond	Durango	Total
Count	20	20	40
Sum	19640.5	21767.5	41408
Average	982.025	1088.375	1035.2
Variance	16652.72	15254.97	18444.86

Total

	Diamond	Durango
Count	60	60
Sum	58404	63628.5
Average	973.4	1060.475
Variance	13983.33	21314.83

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	146694.5	2	73347.27	4.336138	0.015312	3.075854
Varieties	227461.7	1	227461.7	13.44706	0.000374	3.924328
Interaction	7547.962	2	3773.981	0.22311	0.800375	3.075854
Within	1928349	114	16915.34			
Total	2310053	119				

Trial #4. Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00

Head Weight (g)

	Wrangler	Durango	Silverado	Diamond
rep1	696	889	712.5	770.5
	686	858	870	864.5
	777	1060	602	654.5
	866	906	789	858
	897.5	962.5	691.5	657.5
	922.5	964	741.5	837.5
	891	793	804.5	884
	815.5	887	943.5	550.5
	865.5	792.5	717	755
	874.5	1049	902.5	691.5
	890	1364.5	637	839.5
	884	978.5	821	997
	1042	1021.5	909	761
	1065.5	985.5	881	638.5
	890	992	783	828.5
	912.5	1010	717	807
	821.5	1074.5	823.5	1014
	881.5	944.5	741.5	891
	849.5	1061	795	725
	1024	1231.5	791	847
	892	850	864	901
	708.5	978	769.5	818
	872.5	1097.5	1160	748
rep2	949.5	936	725	848
	978	875	845.5	799.5
	994	1017.5	854	912.5
	919.5	1046.5	766.5	1000
	977.5	847.5	787.5	777.5
	991.5	1078.5	799.5	887.5
	873.5	1077.5	830	874.5
	966.5	870	699	664.5
	880.5	1155.2	766.5	812
	955	741	657	956.5
	1019.5	1029.5	805.5	892.5
	900.5	1029	732.5	899
	990	1074.5	963	794
	1158.5	1021	868	838
	1024.5	941	685	863
	743.5	1034.5	713.5	790
	787.5	827	723.5	953.5
	909.5	1117.5	1161.5	766.5
	917.5	862	820	838
	844.5	856	969.5	749
	1054.5	905.5	910	798.5
	847.5	886	866	942
	798	929	996.5	807.5
rep3	899.5	1027	715.5	799
	848.5	1084	706	862.5
	913.5	833.5	791.5	813.5
	705	887.5	768	743.5
	808	801.5	739.5	830
	791	1026.5	1004.5	892.5
	915.5	963.5	935	992
	854.5	1021	844.5	930
	986.5	871.5	744.5	871
	691	1027	794.5	832.5
	776.5	1045.5	785.5	816.5
	748	1033	1018.5	722
	912	809.5	749.5	720.5
	860	956	850.5	768.5
	781.5	1004	719	881.5
	854.5	1070.5	653.5	809.5
	919.5	1039	1107	791
	783	864	1012	804.5

952	1078	862.5	788.5
1121	1213	884	798
824	956.5	874.5	871.5
844.5	1109	828.5	843.5
677	742	743	758

	Wrangler	Durango	Silverado	Diamond
Mean	883.6594	976.3797	819.4638	822.3623
Standard Error	12.41377	14.13004	13.99347	10.67205
Median	884	985.5	795	818
Mode	890	1074.5	741.5	892.5
Standard Deviation	103.1165	117.3729	116.2385	88.64867
Sample Variance	10633.02	13776.4	13511.38	7858.587
Kurtosis	0.10377	0.7485	1.050378	0.733666
Skewness	0.146001	0.372846	0.942918	-0.2821
Range	481.5	623.5	559.5	463.5
Minimum	677	741	602	550.5
Maximum	1158.5	1364.5	1161.5	1014
Sum	60972.5	67370.2	56543	56743
Count	69	69	69	69

**Trial #4 Mcphearson Lot7 south, Salinas, California Evaluated 08/16/00**

Head Weight (g)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep1</i>					
Count	23	23	23	23	92
Sum	20025	22750	18466.5	18339	79580.5
Average	870.6522	989.1304	802.8913	797.3478	865.0054
Variance	9252.328	17207.91	13464.91	12845.12	18743.54
<i>rep2</i>					
Count	23	23	23	23	92
Sum	21481	22157.2	18945	19464	82047.2
Average	933.9565	983.3565	823.6957	846.2609	891.8174
Variance	8931.703	11711.61	14039.45	6150.292	13311.5
<i>rep3</i>					
Count	23	23	23	23	92
Sum	19466.5	22463	19131.5	18940	80001
Average	846.3696	976.6522	831.8043	823.4783	869.5761
Variance	10406.25	13314.71	13793.04	4242.193	14026.53
<i>Total</i>					
Count	69	69	69	69	
Sum	60972.5	67370.2	56543	56743	
Average	883.6594	976.3797	819.4638	822.3623	
Variance	10633.02	13776.4	13511.38	7858.587	

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	37856.39	2	18928.19	1.68052	0.188263	3.029982
Varieties	1118280	3	372760.1	33.09512	3.43E-18	2.638799
Interaction	101632.5	6	16938.75	1.50389	0.177014	2.133007
Within	2973510	264	11263.29			
Total	4231279	275				

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00

Head Weight (g)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
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*rep1*

Count	23	23	46
Sum	20025	22750	42775
Average	870.6522	989.1304	929.8913
Variance	9252.328	17207.91	16523.38

*rep2*

Count	23	23	46
Sum	21481	22157.2	43638.2
Average	933.9566	963.3565	948.6565
Variance	8931.703	11711.61	10313.18

*rep3*

Count	23	23	46
Sum	19466.5	22463	41929.5
Average	846.3696	976.6522	911.5109
Variance	10406.25	13314.71	15934.61

*Total*

Count	69	69	
Sum	60972.5	67370.2	
Average	883.6594	976.3797	
Variance	10633.02	13776.4	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	31736.52	2	15868.26	1.344302	0.264267	3.064756
Varieties	296598.3	1	296598.3	25.12675	1.69E-06	3.912874
Interaction	69964.39	2	34982.19	2.963566	0.055081	3.064756
Within	1558140	132	11804.09			
Total	1956439	137				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
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*Rep1*

Count	23	23	46
Sum	22750	18466.5	41216.5
Average	989.1304	802.8913	896.0109
Variance	17207.91	13464.91	23859.55

*Rep2*

Count	23	23	46
Sum	22157.2	18945	41102.2
Average	963.3565	823.6957	893.5261
Variance	11711.61	14039.45	17574.06

*Rep3*

Count	23	23	46
Sum	22463	19131.5	41594.5
Average	976.6522	831.8043	904.2283
Variance	13314.71	13793.04	18614.46

*Total*

Count	69	69	
Sum	67370.2	56543	
Average	976.3797	819.4638	
Variance	13776.4	13511.38	

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00  
 Head Weight (g)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	2886.288	2	1443.144	0.10366	0.901605	3.064756
Varieties	849480.1	1	849480.1	61.01737	1.56E-12	3.912874
Interaction	14987.1	2	7493.551	0.538255	0.585042	3.064756
Within	1837896	132	13921.94			

Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
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*Rep1*

Count	23	23	46
Sum	18339	22750	41089
Average	797.3478	989.1304	893.2391
Variance	12645.12	17207.91	23994.3

*Rep2*

Count	23	23	46
Sum	18464	22157.2	41621.2
Average	846.2609	963.3565	904.8087
Variance	6150.292	11711.61	12236.51

*Rep3*

Count	23	23	46
Sum	18940	22463	41403
Average	823.4783	976.6522	900.0652
Variance	4242.193	13314.71	14579.28

*Total*

Count	69	69
Sum	56743	67370.2
Average	822.3623	976.3797
Variance	7858.587	13776.4

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	3111.914	2	1555.957	0.143029	0.866863	3.064756
Varieties	818386.8	1	818386.8	75.22877	1.34E-14	3.912874
Interaction	32086.59	2	16043.29	1.474752	0.232581	3.064756
Within	1435981	132	10878.64			
Total	2289566	137				

**Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00****200200046**

Frame Width (cm)

	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>
rep 1	49	49	45	47
	52	47	47	45
	48	54	48	47
	48	52	48	47
	47	55	47	50
	49	54	49	46
	48	51	48	49
	49	52	45	52
	46	54	47	49
	46	52	46	48
	49	55	47	52
	50	51	47	49
	50	52	44	50
	51	51	46	46
	48	52	48	50
	46	48	47	48
	49	55	50	46
	49	53	47	44
	50	48	49	49
	48	54	48	48
	47	53	48	46
	49	53	46	49
	50	54	48	45
	50	52	49	48
rep 2	52	54	49	49
	50	53	48	47
	51	52	46	48
	47	55	47	50
	47	54	47	48
	48	57	46	46
	49	55	46	47
	53	52	49	49
	50	53	50	48
	50	52	51	50
	48	49	51	47
	48	53	48	48
	50	55	48	47
	54	54	49	48
	51	54	45	47
	50	55	46	50
	50	54	50	49
	48	52	47	48
	51	51	46	50
	51	52	47	46
	50	50	47	47
	51	55	47	48
	49	54	46	48
	50	57	48	47

	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>
Mean	49.29167	52.77083	47.45833	47.95833
Standard Error	0.252572	0.316843	0.224711	0.245452
Median	49	53	47	48
Mode	50	54	47	48
Standard Deviation	1.749873	2.195155	1.556843	1.700542
Sample Variance	3.062057	4.818706	2.423759	2.891844
Kurtosis	0.228191	0.457295	-0.0385	0.152129
Skewness	0.227402	-0.63957	0.275023	0.148952
Range	8	10	7	8
Minimum	46	47	44	44
Maximum	54	57	51	52
Sum	2366	2533	2278	2302
Count	48	48	48	48

200200046

**Trial #1 Panziera Lot22, Salinas, California Evaluated 09/13/00**

Frame Width (cm)

## Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep 1</i>					
Count	24	24	24	24	96
Sum	1168	1251	1134	1150	4703
Average	48.66667	52.125	47.25	47.91667	48.98958
Variance	2.405797	5.157609	2.021739	4.427536	6.957785
<i>rep 2</i>					
Count	24	24	24	24	96
Sum	1198	1282	1144	1152	4776
Average	49.91667	53.41667	47.66667	48	49.75
Variance	3.036232	3.818841	2.84058	1.478261	7.978947
<i>Total</i>					
Count	48	48	48	48	
Sum	2366	2533	2278	2302	
Average	49.29167	52.77083	47.45833	47.95833	
Variance	3.062057	4.818706	2.423759	2.891844	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	27.75521	1	27.75521	8.815867	0.003384	3.892495
Varieties	826.5156	3	275.5052	87.50852	3.16E-35	2.653692
Interaction	13.18229	3	4.394097	1.395694	0.245577	2.653692
Within	579.2917	184	3.148324			
<b>Total</b>	<b>1446.745</b>	<b>191</b>				

## Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
<i>rep 1</i>			
Count	24	24	48
Sum	1168	1251	2419
Average	48.66667	52.125	50.39583
Variance	2.405797	5.157609	6.754876
<i>rep 2</i>			
Count	24	24	48
Sum	1198	1282	2480
Average	49.91667	53.41667	51.66667
Variance	3.036232	3.818841	6.48227
<i>Total</i>			
Count	48	48	
Sum	2366	2533	
Average	49.29167	52.77083	
Variance	3.062057	4.818706	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	38.76042	1	38.76042	10.76298	0.001471	3.944535
Columns	290.5104	1	290.5104	80.59392	3.24E-14	3.944535
Interaction	0.010417	1	0.010417	0.00289	0.957245	3.944535
Within	331.625	92	3.60462			
<b>Total</b>	<b>660.9063</b>	<b>95</b>				

Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00

Frame Width (cm)

## Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>Rep1</i>			
Count	24	24	48
Sum	1251	1134	2385
Average	52.125	47.25	49.6875
Variance	5.157609	2.021739	9.581117
<i>Rep2</i>			
Count	24	24	48
Sum	1282	1144	2426
Average	53.41667	47.66667	50.54167
Variance	3.818841	2.84058	11.70035
<i>Total</i>			
Count	48	48	
Sum	2533	2278	
Average	52.77083	47.45833	
Variance	4.818706	2.423759	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	17.51042	1	17.51042	5.061265	0.026851	3.944535
Varieties	677.3438	1	677.3438	195.7815	1.65E-24	3.944535
Interaction	4.59375	1	4.59375	1.327792	0.252184	3.944535
Within	318.2917	92	3.459692			
Total	1017.74	95				

## Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
<i>Rep1</i>			
Count	24	24	48
Sum	1150	1251	2401
Average	47.91667	52.125	50.02083
Variance	4.427536	5.157609	9.212323
<i>Rep2</i>			
Count	24	24	48
Sum	1152	1282	2434
Average	48	53.41667	50.70833
Variance	1.478261	3.818841	10.08333
<i>Total</i>			
Count	48	48	
Sum	2302	2533	
Average	47.95833	52.77083	
Variance	2.891844	4.818706	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	11.34375	1	11.34375	3.048935	0.084128	3.944535
Varieties	555.8438	1	555.8438	149.3978	5.61E-21	3.944535
Interaction	8.760417	1	8.760417	2.354595	0.128346	3.944535
Within	342.2917	92	3.720562			
Total	918.2396	95				

Trial #2 Wilder Lot 19, Salinas, California Evaluated 09/13/00  
Frame Width (cm)

	Wrangler	Durango	Silverado	Diamond
Rep1	50	52	49	50
	50	57	49	48
	48	54	51	49
	49	52	48	50
	47	55	47	48
	52	54	52	49
	52	53	51	49
	51	51	52	51
	51	51	47	52
	54	56	46	51
	52	53	48	48
	52	52	47	51
	51	49	52	52
	54	55	48	53
	50	56	50	54
	51	53	48	52
	48	54	48	51
	51	57	54	53
	50	58	51	55
	51	53	47	52
	47	56	46	51
	52	55	51	53
	46	51	49	49
	53	54	50	53
Rep2	46	53	47	51
	49	56	48	46
	46	55	49	51
	50	53	50	51
	51	54	49	47
	48	55	48	48
	46	54	49	46
	50	51	48	53
	45	53	44	53
	48	52	48	51
	51	53	49	49
	48	52	51	47
	46	53	49	48
	50	54	50	52
	49	56	50	46
	51	53	45	47
	51	57	48	46
	50	53	49	49
	53	51	52	54
	49	54	52	54
	47	55	52	48
	51	53	48	51
	50	51	52	49
	48	56	51	47
rep3	46	53	51	52
	49	53	48	49
	52	52	49	48
	49	52	47	52
	48	50	50	52
	51	50	51	50
	50	49	49	51
	50	54	52	47
	49	52	51	52
	51	52	52	49
	49	52	49	52
	52	50	51	49
	53	54	49	51
	51	55	52	50
	53	53	52	51
	48	54	53	50

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49	53	51	47
50	53	46	51
48	51	50	51
49	55	50	46
50	54	50	48
50	51	49	47
54	52	53	47
53	53	54	50

	Wrangler	Durango	Silverado	Diamond
Mean	49.84722	53.26389	49.55556	50
Standard Error	0.253041	0.228961	0.248539	0.271206
Median	50	53	49	50
Mode	50	53	49	51
Standard Deviation	2.147122	1.942795	2.108927	2.301255
Sample Variance	4.610133	3.774452	4.447574	5.295775
Kurtosis	-0.43765	-0.18333	-0.26953	-0.87947
Skewness	-0.18254	0.113638	-0.14926	-0.04279
Range	9	9	10	9
Minimum	45	49	44	46
Maximum	54	58	54	55
Sum	3589	3835	3568	3600
Count	72	72	72	72

**Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00**

Frame Width (cm)

**Anova: Two-Factor With Replication**

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep 1</i>					
Count	24	24	24	24	96
Sum	1212	1291	1181	1224	4908
Average	50.5	53.79167	49.20833	51	51.125
Variance	4.521739	5.041667	4.693841	3.913043	7.226316
<i>rep2</i>					
Count	24	24	24	24	96
Sum	1173	1287	1178	1184	4822
Average	48.875	53.625	49.08333	49.33333	50.22917
Variance	4.375	2.766304	4.253623	7.101449	8.389035
<i>rep3</i>					
Count	24	24	24	24	96
Sum	1204	1257	1209	1192	4862
Average	50.18667	52.375	50.375	49.66667	50.64583
Variance	3.797101	2.592391	3.722826	3.710145	4.420614
<i>Total</i>					
Count	72	72	72	72	
Sum	3589	3835	3568	3600	
Average	49.84722	53.26389	49.55556	50	
Variance	4.610133	3.774452	4.447574	5.295775	

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Reps	38.58333	2	19.29167	4.585145	0.010992	3.028489
Varieties	654.9167	3	218.3056	51.88576	1.26E-26	2.637307
Interaction	87.25	6	14.54167	3.456189	0.002816	2.1315
Within	1161.25	276	4.207428			
Total	1942	287				

Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00

Frame Width (cm)

Anova: Two-Factor With Replication

SUMMARY <i>Rep1</i>	Wrangler	Durango	Total
Count	24	24	48
Sum	1212	1291	2503
Average	50.5	53.79167	52.14583
Variance	4.521739	5.041667	7.446365

<i>Rep2</i>	24	24	48
Count	24	24	48
Sum	1173	1287	2460
Average	48.875	53.625	51.25
Variance	4.375	2.766304	9.255319

<i>Rep3</i>	24	24	48
Count	24	24	48
Sum	1204	1257	2461
Average	50.16667	52.375	51.27083
Variance	3.797101	2.592391	4.371897

<i>Total</i>	72	72	
Count	72	72	
Sum	3589	3835	
Average	49.84722	53.26389	
Variance	4.610133	3.774452	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	26.09722	2	12.54861	3.260198	0.041357	3.061714
Varieties	420.25	1	420.25	109.1832	3.45E-19	3.909733
Interaction	39.04167	2	19.52083	5.071619	0.007492	3.061714
Within	531.1667	138	3.849034			
Total	1015.556	143				

Anova: Two-Factor With Replication

SUMMARY <i>Rep1</i>	Durango	Silverado	Total
Count	24	24	48
Sum	1291	1181	2472
Average	53.79167	49.20833	51.5
Variance	5.041667	4.693841	10.12766

<i>Rep2</i>	24	24	48
Count	24	24	48
Sum	1287	1178	2465
Average	53.625	49.08333	51.35417
Variance	2.766304	4.253623	8.701684

<i>Rep3</i>	24	24	48
Count	24	24	48
Sum	1257	1209	2466
Average	52.375	50.375	51.375
Variance	2.592391	3.722826	4.111702

<i>Total</i>	72	72	
Count	72	72	
Sum	3835	3568	
Average	53.26389	49.55566	
Variance	3.774452	4.447574	

Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00  
 Frame Width (cm)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	0.597222	2	0.298611	0.07766	0.925319	3.061714
Varieties	495.0625	1	495.0625	128.7512	1.72E-21	3.909733
Interaction	52.54167	2	26.27083	6.832273	0.001481	3.061714
Within	530.625	138	3.845109			
Total	1078.826	143				

## Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
<i>Rep1</i>			
Count	24	24	48
Sum	1224	1291	2515
Average	51	53.79167	52.39583
Variance	3.913043	5.041667	6.371897
<i>Rep2</i>			
Count	24	24	48
Sum	1184	1287	2471
Average	49.33333	53.625	51.47917
Variance	7.101449	2.766304	9.531472
<i>Rep3</i>			
Count	24	24	48
Sum	1192	1257	2449
Average	49.66667	52.375	51.02083
Variance	3.710145	2.592391	4.957004
<i>Total</i>			
Count	72	72	
Sum	3600	3835	
Average	50	53.26389	
Variance	5.295775	3.774452	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	47.05556	2	23.52778	5.618574	0.00451	3.061714
Columns	383.5069	1	383.5069	91.58375	5.93E-17	3.909733
Interaction	19.05556	2	9.527778	2.27529	0.10661	3.061714
Within	577.875	138	4.1875			
Total	1027.493	143				

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Frame Width (cm)

	Wrangler	Durango	Silverado	Diamond
rep1	53	56	43	46
	54	52	52	47
	52	53	48	48
	49	57	45	45
	51	53	47	45
	57	49	45	43
	48	52	50	47
	48	53	51	50
	47	57	46	45
	51	58	47	47
	52	52	48	48
	55	52	52	46
	48	55	46	45
	55	56	47	49
	48	54	50	48
	57	55	50	43
	48	58	51	48
	52	53	45	48
	56	52	48	42
rep2	52	55	44	43
	54	59	45	44
	51	53	48	48
	50	51	46	44
	50	53	46	50
	53	56	45	47
	51	55	49	45
	54	55	48	50
	53	51	47	47
	51	53	48	47
	50	53	48	46
	53	52	45	47
	55	56	45	51
	52	55	46	47
	55	50	46	49
	51	52	45	48
	67	53	50	49
	50	55	47	49
	52	50	47	46
rep3	48	55	46	52
	55	53	45	46
	50	51	43	46
	56	52	45	47
	48	51	49	46
	53	48	48	51
	52	55	47	48
	54	50	50	45
	52	54	46	50
	51	54	46	48
	53	53	44	47
	56	53	45	48
	51	56	48	48
	56	55	45	46
	55	55	47	45
	49	52	46	50
	51	52	48	44
	55	54	48	46
	51	52	47	45
	52	51	49	45
	54	56	47	48
	53	48	48	52

**Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00**  
 Frame Width (cm)

	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>
Mean	52.16667	53.4	47.05	47
Standard Error	0.341289	0.307349	0.27041	0.291111
Median	52	53	47	47
Mode	51	53	48	48
Standard Deviation	2.643615	2.380713	2.094585	2.254938
Sample Variance	6.988701	5.667797	4.387288	5.084746
Kurtosis	-0.79065	-0.09429	-0.18097	-0.23257
Skewness	-0.01561	-0.00405	0.423889	0.119278
Range	10	11	9	10
Minimum	47	48	43	42
Maximum	57	59	52	52
Sum	3130	3204	2823	2820
Count	60	60	60	60

## Anova: Two-Factor With Replication

SUMMARY	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	Total
<i>rep1</i>					
Count	20	20	20	20	80
Sum	1033	1082	955	923	3993
Average	51.65	54.1	47.75	46.15	49.9125
Variance	10.66053	5.778947	7.355263	4.976316	16.89098
<i>rep2</i>					
Count	20	20	20	20	80
Sum	1045	1070	932	952	3999
Average	52.25	53.5	46.6	47.6	49.9875
Variance	5.144737	5.105263	2.252632	4.778947	12.92389
<i>rep3</i>					
Count	20	20	20	20	80
Sum	1052	1052	936	945	3985
Average	52.6	52.6	46.8	47.25	49.8125
Variance	5.410526	5.515789	3.221053	4.828947	12.45807
<i>Total</i>					
Count	60	60	60	60	240
Sum	3130	3204	2823	2820	12177
Average	52.16667	53.4	47.05	47	49.895
Variance	6.988701	5.667797	4.387288	5.084746	16.89098

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	1.233333	2	0.616667	0.113795	0.892491	3.035439
Varieties	2035.212	3	678.4042	125.1881	6.06E-48	2.644192
Interaction	68.8	6	11.46667	2.115981	0.05241	2.138492
Within	1235.55	228	5.419079			
Total	3340.796	239				

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Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Frame Width (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
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*rep1*

Count	20	20	40
Sum	1033	1082	2115
Average	51.65	54.1	52.875
Variance	10.66053	5.778947	9.548077

*rep2*

Count	20	20	40
Sum	1045	1070	2115
Average	52.25	53.5	52.875
Variance	5.144737	5.105263	5.394231

*rep3*

Count	20	20	40
Sum	1052	1052	2104
Average	52.6	52.6	52.6
Variance	5.410526	5.515789	5.323077

*Total*

Count	60	60
Sum	3130	3204
Average	52.16667	53.4
Variance	8.988701	5.667797

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit.
Reps	2.016667	2	1.008333	0.160837	0.851624	3.075854
Varieties	45.63333	1	45.63333	7.278858	0.008037	3.924328
Interaction	30.01667	2	15.00833	2.393942	0.095844	3.075854
Within	714.7	114	6.269298			
Total	792.3667	119				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
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*Rep1*

Count	20	20	40
Sum	1082	955	2037
Average	54.1	47.75	50.925
Variance	5.778947	7.355263	16.73782

*Rep2*

Count	20	20	40
Sum	1070	932	2002
Average	53.5	46.6	50.05
Variance	5.105263	2.252632	15.79231

*Rep3*

Count	20	20	40
Sum	1052	936	1988
Average	52.6	46.8	49.7
Variance	5.515789	3.221053	12.88205

*Total*

Count	60	60
Sum	3204	2823
Average	53.4	47.05
Variance	5.667797	4.387288

**Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00**  
**Frame Width (cm)**

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	31.85	2	15.925	3.26902	0.041639	3.075854
Varieties	1209.675	1	1209.675	248.3172	2.13E-30	3.924328
Interaction	6.05	2	3.025	0.62096	0.539236	3.075854
Within	555.35	114	4.871491			
<b>Total</b>	<b>1802.925</b>	<b>119</b>				

**Anova: Two-Factor With Replication**

SUMMARY	Diamond	Durango	Total
<i>Rep1</i>			
Count	20	20	40
Sum	923	1082	2005
Average	46.15	54.1	50.125
Variance	4.976316	5.778947	21.44551
<i>Rep2</i>			
Count	20	20	40
Sum	952	1070	2022
Average	47.6	53.5	50.55
Variance	4.778947	5.105263	13.74103
<i>Rep3</i>			
Count	20	20	40
Sum	945	1052	1997
Average	47.25	52.6	49.925
Variance	4.828947	5.515789	12.37885
<i>Total</i>			
Count	60	60	
Sum	2820	3204	
Average	47	53.4	
Variance	5.084746	5.667797	

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	8.15	2	4.075	0.789112	0.456713	3.075854
Varieties	1228.8	1	1228.8	237.9535	1.12E-29	3.924328
Interaction	37.55	2	18.775	3.635723	0.029467	3.075854
Within	588.7	114	5.164035			
<b>Total</b>	<b>1863.2</b>	<b>119</b>				

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00  
Frame Width (cm)

	Wrangler	Durango	Silverado	Diamond
rep1	50	50	51	58
	53	53	49	54
	52	55	51	55
	55	55	51	51
	50	54	52	48
	53	52	54	52
	55	57	53	51
	51	55	52	54
	49	55	52	52
	47	54	49	56
	52	56	54	53
	50	57	50	53
	52	55	53	54
	51	51	48	57
	48	52	53	53
	53	54	52	52
	52	53	51	54
	52	54	50	52
	48	57	54	57
	53	53	52	51
	54	51	48	51
	55	54	49	49
	52	55	48	53
	51	53	56	54
	52	55	53	52
	54	52	54	52
	51	55	53	51
	53	50	53	53
	54	54	52	54
	52	50	53	53
	53	53	52	54
	51	52	54	52
	50	51	55	53
	53	53	53	54
	54	56	55	52
	55	52	52	53
	52	52	57	54
	56	53	53	54
	51	53	54	55
	52	55	52	51
	54	54	51	54
	56	56	52	52
	54	53	53	53
	57	55	50	53
	55	49	51	55
	48	51	54	54
rep2	52	53	49	53
	49	56	52	57
	48	51	48	55
	52	52	51	54
	53	55	53	55
	49	50	52	52
	55	51	51	53
	53	52	53	54
	53	50	48	55
	52	53	50	54
	53	56	53	53
	52	52	52	52
	48	52	50	55
	50	54	51	53
	51	55	48	50
	53	53	51	54
	50	53	50	55
	49	51	48	53
rep3	52	53	49	53
	49	56	52	57
	48	51	48	55
	52	52	51	54
	53	55	53	55
	49	50	52	52
	55	51	51	53
	53	52	53	54
	53	50	48	55
	52	53	50	54
	53	56	53	53
	52	52	52	52
	48	52	50	55
	50	54	51	53
	51	55	48	50
	53	53	51	54
	50	53	50	55
	49	51	48	53

50	53	49	51
48	55	48	48
53	55	49	54
54	53	52	51
54	57	54	52

	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>
Mean	51.97101	53.33333	51.5942	53.11594
Standard Error	0.272317	0.235099	0.256475	0.230401
Median	52	53	52	53
Mode	52	53	52	54
Standard Deviation	2.262033	1.952876	2.130443	1.913852
Sample Variance	5.116795	3.813725	4.538789	3.66283
Kurtosis	-0.46952	-0.65021	-0.43468	0.88862
Skewness	-0.2064	-0.07095	-0.04958	-0.17012
Range	10	8	9	10
Minimum	47	49	48	48
Maximum	57	57	57	58
Sum	3586	3680	3560	3665
Count	69	69	69	69

**Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00**

Frame Width (cm)

## Anova: Two-Factor With Replication

SUMMARY	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	Total
<i>rep1</i>					
Count	23	23	23	23	92
Sum	1187	1242	1176	1220	4825
Average	51.6087	54	51.13043	53.04348	52.44565
Variance	5.067194	3.727273	3.84585	6.134387	5.854157
<i>rep2</i>					
Count	23	23	23	23	92
Sum	1218	1217	1222	1222	4879
Average	52.95652	52.91304	53.13043	53.13043	53.03261
Variance	4.588933	3.719368	2.664032	1.300395	2.976947
<i>rep3</i>					
Count	23	23	23	23	92
Sum	1181	1221	1162	1223	4787
Average	51.34783	53.08696	50.52174	53.17391	52.03261
Variance	4.600791	3.628458	3.624506	3.87747	5.108815
<i>Total</i>					
Count	69	69	69	69	
Sum	3586	3680	3560	3665	
Average	51.97101	53.33333	51.5942	53.11594	
Variance	5.116795	3.813725	4.538789	3.66283	
<b>ANOVA</b>					
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>
Reps	46.46377	2	23.23188	5.959611	0.002941
Varieties	150.0109	3	50.00362	12.82729	7.52E-08
Interaction	89.3913	6	14.89855	3.821884	0.001135
Within	1029.13	264	3.898221		2.133007
Total	1314.996	275			

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00

Frame Width (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
<i>rep1</i>			

Count	23	23	46
Sum	1187	1242	2429
Average	51.6087	54	52.80435
Variance	5.067194	3.727273	5.76087

<i>rep2</i>			
Count	23	23	46

Sum	1218	1217	2435
Average	52.95652	52.91304	52.93478
Variance	4.588933	3.719368	4.062319

<i>rep3</i>			
Count	23	23	46

Sum	1181	1221	2402
Average	51.34783	53.08696	52.21739
Variance	4.600791	3.628458	4.796135

<i>Total</i>			
Count	69	69	
Sum	3586	3680	
Average	51.97101	53.33333	
Variance	5.116795	3.813725	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	13.43478	2	6.717391	1.591044	0.207594	3.064756
Varieties	64.02899	1	64.02899	15.16555	0.000156	3.912874
Interaction	36.63623	2	18.26812	4.326884	0.015132	3.064756
Within	557.3043	132	4.222003			
<i>Total</i>	671.3043	137				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>Rep1</i>			

Count	23	23	46
Sum	1242	1176	2418
Average	54	51.13043	52.56522
Variance	3.727273	3.84585	5.806763

<i>Rep2</i>			
Count	23	23	46

Sum	1217	1222	2439
Average	52.91304	53.13043	53.02174
Variance	3.719368	2.664032	3.13285

<i>Rep3</i>			
Count	23	23	46

Sum	1221	1162	2383
Average	53.08696	50.52174	51.80435
Variance	3.628458	3.624506	5.227536

<i>Total</i>			
Count	69	69	

Sum	3680	3560	
Average	53.33333	51.5942	
Variance	3.813725	4.538789	

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00  
 Frame Width (cm)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	34.7971	2	17.39855	4.921916	0.008677	3.064756
Varieties	104.3478	1	104.3478	29.51919	2.58E-07	3.912874
Interaction	66.56522	2	33.28261	9.415393	0.000151	3.064756
Within	466.6087	132	3.534914			
Total	672.3188	137				

## Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
<i>Rep1</i>			
Count	23	23	46
Sum	1220	1242	2462
Average	53.04348	54	53.52174
Variance	6.134387	3.727273	5.055072
<i>Rep2</i>			
Count	23	23	46
Sum	1222	1217	2439
Average	53.13043	52.91304	53.02174
Variance	1.300395	3.719368	2.466184
<i>Rep3</i>			
Count	23	23	46
Sum	1223	1221	2444
Average	53.17391	53.08696	53.13043
Variance	3.87747	3.628458	3.671498
<i>Total</i>			
Count	69	69	
Sum	3665	3680	
Average	53.11594	53.33333	
Variance	3.66283	3.813725	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	6.362319	2	3.181159	0.852578	0.428649	3.064756
Varieties	1.630435	1	1.630435	0.43697	0.50974	3.912874
Interaction	9.521739	2	4.76087	1.275953	0.282585	3.064756
Within	492.5217	132	3.731225			
Total	510.0362	137				

Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00

Head Height (cm)

	Wrangler	Durango	Silverado	Diamond
rep 1	16	14	14	15
	14	14	16	15
	15	14	14	15
	15	14	15	14
	15	14	13	14
	15	15	14	15
	15	14	16	15
	15	14	14	16
	13	15	15	15
	15	14	15	15
	15	14	14	16
	15	14	15	15
	15	15	15	14
	15	13	15	15
	13	13	14	15
	14	13	14	14
	15	14	15	15
	15	13	15	16
	15	13	14	16
	13	13	14	15
	14	13	15	15
	16	13	16	14
	15	13	15	14
	13	13	15	13
Rep2	14	14	14	14
	14	15	14	13
	14	14	15	14
	15	15	18	13
	15	14	12	14
	15	14	14	15
	15	14	15	15
	14	14	13	13
	12	14	13	15
	14	14	14	14
	15	13	14	13
	15	15	14	14
	14	14	16	15
	15	14	15	12
	13	16	15	16
	14	13	15	14
	15	13	14	15
	14	13	14	16
	14	15	16	13
	14	13	15	16
	14	15	14	15
	15	14	12	14
	13	14	16	15
	15	14	16	14

	Wrangler	Durango	Silverado	Diamond
Mean	14.4375	13.89583	14.58333	14.54167
Standard Error	0.122425	0.108338	0.157083	0.139523
Median	15	14	15	15
Mode	15	14	14	15
Standard Deviation	0.848183	0.750591	1.0883	0.966642
Sample Variance	0.719415	0.563387	1.184397	0.934397
Kurtosis	0.341843	-0.06668	1.537653	-0.17299
Skewness	-0.77857	0.489791	0.190423	-0.4177
Range	4	3	6	4
Minimum	12	13	12	12
Maximum	16	16	18	16
Sum	693	667	700	698
Count	48	48	48	48

Trial #1 Panziera Lot22, Salinas, California Evaluated 09/13/00

Head Height (cm)

## Anova: Two-Factor With Replication

SUMMARY rep 1	Wrangler	Durango	Silverado	Diamond	Total
Count	24	24	24	24	96
Sum	351	329	352	356	1388
Average	14.625	13.70833	14.66667	14.83333	14.45833
Variance	0.766304	0.476449	0.57971	0.57971	0.777193

rep 2	Wrangler	Durango	Silverado	Diamond	Total
Count	24	24	24	24	96
Sum	342	338	348	342	1370
Average	14.25	14.08333	14.5	14.25	14.27083
Variance	0.630435	0.601449	1.826087	1.152174	1.041667

Total	Wrangler	Durango	Silverado	Diamond	Total
Count	48	48	48	48	48
Sum	693	667	700	698	698
Average	14.4375	13.89583	14.58333	14.54167	14.54167
Variance	0.719415	0.563387	1.184397	0.934397	0.934397

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
reps	1.6875	1	1.6875	2.041644	0.15474	3.892495
Varieties	14.60417	3	4.868056	5.88968	0.000735	2.653692
Interaction	6.104167	3	2.034722	2.461735	0.064045	2.653692
Within	152.0833	184	0.82654			
Total	174.4792	191				

## Anova: Two-Factor With Replication

SUMMARY rep 1	Wrangler	Durango	Total
Count	24	24	48
Sum	351	329	680
Average	14.625	13.70833	14.16667
Variance	0.766304	0.476449	0.822695

Rep2	Wrangler	Durango	Total
Count	24	24	48
Sum	342	338	680
Average	14.25	14.08333	14.16667
Variance	0.630435	0.601449	0.609929

Total	Wrangler	Durango	Total
Count	48	48	48
Sum	693	667	698
Average	14.4375	13.89583	14.54167
Variance	0.719415	0.563387	0.934397

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	0	1	0	0	1	3.944535
Varieties	7.041667	1	7.041667	11.38214	0.001087	3.944535
Interaction	3.375	1	3.375	5.455344	0.021682	3.944535
Within	56.91667	92	0.618659			
Total	67.33333	95				

Trial #1 Panzierra Lot22, Salinas, California. Evaluated 09/13/00  
Head Height (cm)

## Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>Rep1</i>			
Count	24	24	48
Sum	329	352	681
Average	13.70833	14.66667	14.1875
Variance	0.476449	0.57971	0.75133
<i>Rep2</i>			
Count	24	24	48
Sum	338	348	686
Average	14.08333	14.5	14.29167
Variance	0.601449	1.826087	1.23227
<i>Total</i>			
Count	48	48	
Sum	667	700	
Average	13.89583	14.58333	
Variance	0.563387	1.184397	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	0.260417	1	0.260417	0.299012	0.585826	3.944535
Varieties	11.34375	1	11.34375	13.02496	0.0005	3.944535
Interaction	1.760417	1	1.760417	2.021321	0.158485	3.944535
Within	80.125	92	0.870924			
Total	93.48958	95				

## Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
<i>Rep1</i>			
Count	24	24	48
Sum	356	329	685
Average	14.83333	13.70833	14.27083
Variance	0.57971	0.476449	0.839982
<i>Rep2</i>			
Count	24	24	48
Sum	342	338	680
Average	14.25	14.08333	14.16667
Variance	1.152174	0.601449	0.865248
<i>Total</i>			
Count	48	48	
Sum	698	667	
Average	14.54167	13.89583	
Variance	0.934397	0.563387	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	0.260417	1	0.260417	0.370729	0.544108	3.944535
Varieties	10.01042	1	10.01042	14.25081	0.000283	3.944535
Interaction	5.510417	1	5.510417	7.844616	0.006213	3.944535
Within	64.625	92	0.702446			
Total	80.40625	95				

Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00  
Head Height (cm)

	Wrangler	Durango	Silverado	Diamond
Rep1	16	17	16	15
	16	15.5	15	17
	16	15.5	13	15
	17	16	16	15
	17	16	15	16
	18	16.5	15	16
	15	15	15	15
	14.5	16	16	14
	17	17	14	14
	15.5	17	13	15
	16	15	14	13
	15.5	15	14	14
	16.5	17	18	15
	14.5	16.5	15	14
	16	14.5	14	15
	15	15.5	12	15
	17.5	15.5	16	14
	16	15	16	14.5
	13.5	15	17	15
	17	17	16	13
	14.5	14.5	14.5	15
	16	14	14	14.5
	15	13	14	15
	16	14	15.5	14.5
Rep2	16	15	14	17
	16	16	16	13
	15	14	15	14
	15	15	15	14
	14.5	15	15	15
	14	16	15	16
	14	13	15	14
	16	13	14	14
	16.5	13.5	16	15
	14	14	16	15
	15	15	15	14
	16	15	13	14
	16	15	16	14
	17	14	15	15
	16	14	16	15
	15	15.5	15	16
	14	15	17	16
	16	15	15	16
	14	16	15	17
	15	15	14	17
	15.5	15	12	15
	16	14	15	15
	17	15	16	15
	16	15	16	14
rep3	16	15	13	15
	16	14	15	14
	13	15	15	14
	17	16	13	16
	14	16	15	14
	14	15	15	14
	14	15	15	15
	15	12	14	15
	14	15	16	15
	14	15	15	15
	15	15	14	16
	14	15	14	15
	15	16	13	15
	15	15	15	14
	15	15	16	16
	16	14	16	15

14	15	14	14
14	15	16	15
15	14	15	16
16	15	14	16
17	15	14	14
14	15	15	14
15	13	16	14
15	15	16	14

	Wrangler	Durango	Silverado	Diamond
Mean	15.38194	15.01389	14.90278	14.84028
Standard Error	0.128375	0.119078	0.134749	0.109159
Median	15.25	15	15	15
Mode	16	15	15	15
Standard Deviation	1.089298	1.010411	1.143379	0.926246
Sample Variance	1.186571	1.020931	1.307316	0.857932
Kurtosis	-0.66337	0.701168	0.357615	0.051884
Skewness	0.093373	-0.27063	-0.27003	0.457692
Range	5	5	6	4
Minimum	13	12	12	13
Maximum	18	17	18	17
Sum	1107.5	1081	1073	1068.5
Count	72	72	72	72

**Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00**

Head Height (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep1</i>					
Count	24	24	24	24	96
Sum	381	373	358	353.5	1465.5
Average	15.875	15.54167	14.91667	14.72917	15.26563
Variance	1.157609	1.21558	1.84058	0.782156	1.426069
<i>rep 2</i>					
Count	24	24	24	24	96
Sum	369.5	353	361	360	1443.5
Average	15.39583	14.70833	15.04167	15	15.03646
Variance	0.912591	0.71558	1.172101	1.217391	1.032867
<i>rep3</i>					
Count	24	24	24	24	96
Sum	357	355	354	355	1421
Average	14.875	14.79167	14.75	14.79167	14.80208
Variance	1.070652	0.780797	0.978261	0.606884	0.834101
<i>Total</i>					
Count	72	72	72	72	
Sum	1107.5	1081	1073	1068.5	
Average	15.38194	15.01389	14.90278	14.84028	
Variance	1.186571	1.020931	1.307316	0.857932	

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	10.31424	2	5.157118	4.970644	0.007573	3.028489
Varieties	12.6875	3	4.229167	4.076246	0.007427	2.637307
Interaction	13.79688	6	2.299479	2.216333	0.041766	2.1315
Within	286.3542	276	1.037515			
Total	323.1528	287				

Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00

Head Height (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
<i>Rep1</i>			
Count	24	24	48
Sum	381	373	754
Average	15.875	15.54167	15.70833
Variance	1.167609	1.21558	1.189716
<i>Rep2</i>			
Count	24	24	48
Sum	369.5	353	722.5
Average	15.39583	14.70833	15.05208
Variance	0.912591	0.71558	0.917442
<i>rep3</i>			
Count	24	24	48
Sum	367	355	712
Average	14.875	14.79167	14.83333
Variance	1.070652	0.780797	0.907801
<i>Total</i>			
Count	72	72	
Sum	1107.5	1081	
Average	15.38194	15.01389	
Variance	1.186571	1.020931	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	19.90625	2	9.953125	10.20344	7.37E-05	3.061714
Varieties	4.876736	1	4.876736	4.999381	0.026962	3.909733
Interaction	2.211806	2	1.105903	1.133715	0.324814	3.061714
Within	134.6146	138	0.975468			
Total	161.6094	143				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>Rep1</i>			
Count	24	24	48
Sum	373	358	731
Average	15.54167	14.91667	15.22917
Variance	1.21558	1.84058	1.595301
<i>Rep2</i>			
Count	24	24	48
Sum	353	361	714
Average	14.70833	15.04167	14.875
Variance	0.71558	1.172101	0.952128
<i>Rep3</i>			
Count	24	24	48
Sum	355	354	709
Average	14.79167	14.75	14.77083
Variance	0.780797	0.978261	0.861259
<i>Total</i>			
Count	72	72	
Sum	1081	1073	
Average	15.01389	14.90278	
Variance	1.020931	1.307316	

Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00

Head Height (cm)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	5.541667	2	2.770833	2.48027	0.087446	3.061714
Varieties	0.444444	1	0.444444	0.397838	0.529251	3.909733
Interaction	5.597222	2	2.798611	2.505135	0.085373	3.061714
Within	154.1667	138	1.11715			
Total	165.75	143				

## Anova: Two-Factor With Replication

## SUMMARY Diamond Durango Total

## Rep1

Count	24	24	48
Sum	353.5	373	726.5
Average	14.72917	15.54167	15.13542
Variance	0.782156	1.21558	1.146166

## Rep2

Count	24	24	48
Sum	360	353	713
Average	15	14.70833	14.85417
Variance	1.217391	0.71558	0.967642

## Rep3

Count	24	24	48
Sum	355	355	710
Average	14.79167	14.79167	14.79167
Variance	0.606884	0.780797	0.679078

## Total

Count	72	72
Sum	1068.5	1081
Average	14.84028	15.01389
Variance	0.857932	1.020931

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	3.21875	2	1.609375	1.815635	0.1666	3.061714
Varieties	1.085069	1	1.085069	1.224134	0.270476	3.909733
Interaction	7.857639	2	3.928819	4.432343	0.013626	3.061714
Within	122.3229	138	0.886398			
Total	134.4844	143				

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Head Height (cm)

	Wrangler	Durango	Silverado	Diamond
rep1	17.5	16	14.5	14
	15.5	14.5	14.5	14.5
	16	15.5	15	16
	14	15	13.5	14.5
	15.5	15.5	14	14
	15.5	13.5	14	14.5
	15.5	15.5	14	15.5
	16	14.5	15	15
	14	16.5	15	14.5
	16.5	15.5	14	14
	15	15.5	14.5	14.5
	14	16	15	14.5
	16.5	13.5	15	15.5
	14.5	15.5	14.5	14.5
	14.5	13.5	14.5	14.5
	14.5	14.5	14	14.5
	14.5	14	16	15
	16	14	14.5	15
	14.5	14.5	14.5	14.5
	16	14	15	14
rep2	14.5	15.5	16	14.5
	16	16.5	16.5	15
	16	15	15	14.5
	16.5	14.5	16	14.5
	13	14	14.5	15
	16	16	14.5	15.5
	15.5	15	15.5	14.5
	14.5	15.5	14	15
	14.5	14.5	15.5	14
	16.5	15.5	15	15
	16.5	16	14.5	16.5
	15.5	14.5	14	15
	14.5	14	15.5	15.5
	15.5	14.5	14	14
	14	18.5	14.5	15
	15	15.5	14.5	15.5
	16	15.5	14.5	14.5
	16	15.5	14	14
	15.5	15.5	15.5	15
	14.5	16.5	15.5	15
rep3	15.5	15.5	15	14.5
	14	15.5	14.5	15
	16	15	14.5	14.5
	15.5	16	15.5	14.5
	16	15.5	14	14.5
	13.5	14.5	13.5	15.5
	14.5	15.5	16	16
	15	15.5	14.5	16.5
	17	16	14.5	14
	16.5	14.5	14.5	15
	16.5	15.5	14.5	15
	15	15	14.5	14.5
	15	14	15.5	14.5
	16.5	14.5	14.5	14.5
	15.5	14	15.5	14.5
	15.5	14.5	14.5	13.5
	16	14.5	15	15.5
	15.5	14.5	14.5	14.5
	15	14.5	14.5	15.5
	16.5	15	14.5	16

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00  
 Head Height (cm)

	Wrangler	Durango	Silverado	Diamond
Mean	15.375	15.04167	14.73333	14.80833
Standard Error	0.120395	0.102436	0.083587	0.081556
Median	15.5	15	14.5	14.5
Mode	15.5	15.5	14.5	14.5
Standard Deviation	0.932579	0.793467	0.647464	0.631729
Sample Variance	0.869703	0.62959	0.419209	0.399082
Kurtosis	-0.37466	-0.76961	0.092082	0.47476
Skewness	-0.23814	-0.06221	0.608809	0.71886
Range	4.5	3	3	3
Minimum	13	13.5	13.5	13.5
Maximum	17.5	16.5	16.5	16.5
Sum	922.5	902.5	884	888.5
Count	60	60	60	60

## Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep1</i>					
Count	20	20	20	20	80
Sum	306	297	291	293	1187
Average	15.3	14.85	14.55	14.65	14.8375
Variance	0.957895	0.844737	0.313158	0.292105	0.663133
<i>rep2</i>					
Count	20	20	20	20	80
Sum	306	306	299	297.5	1208.5
Average	15.3	15.3	14.95	14.875	15.10625
Variance	0.905263	0.615789	0.576316	0.365132	0.630973
<i>rep3</i>					
Count	20	20	20	20	80
Sum	310.5	299.5	294	298	1202
Average	15.525	14.975	14.7	14.9	15.025
Variance	0.801974	0.380921	0.326316	0.542105	0.587975
<i>Total</i>					
Count	60	60	60	60	
Sum	922.5	902.5	884	888.5	
Average	15.375	15.04167	14.73333	14.80833	
Variance	0.869703	0.62959	0.419209	0.399082	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	3.039583	2	1.519792	2.634826	0.073915	3.035439
Varieties	14.98646	3	4.995486	8.660552	1.82E-05	2.644192
Interaction	2.185417	6	0.364236	0.631467	0.705004	2.138492
Within	131.5125	228	0.576809			
Total	151.724	239				

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Head Height (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
<i>rep1</i>			

Count	20	20	40
Sum	306	297	603
Average	15.3	14.85	15.075
Variance	0.957895	0.844737	0.930128

*rep2*

Count	20	20	40
Sum	306	306	612
Average	15.3	15.3	15.3
Variance	0.905263	0.615789	0.741026

*rep3*

Count	20	20	40
Sum	310.5	299.5	610
Average	15.525	14.975	15.25
Variance	0.801974	0.380921	0.653846

*Total*

Count	60	60	
Sum	922.5	902.5	
Average	15.375	15.04167	
Variance	0.869703	0.62959	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	1.116667	2	0.558333	0.743358	0.477805	3.076854
Varieties	3.333333	1	3.333333	4.437956	0.037342	3.924328
Interaction	1.716667	2	0.858333	1.142774	0.322559	3.075854
Within	85.625	114	0.751096			
<b>Total</b>	<b>91.79167</b>	<b>119</b>				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
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*Rep1*

Count	20	20	40
Sum	297	291	588
Average	14.85	14.55	14.7
Variance	0.844737	0.313158	0.587179

*Rep2*

Count	20	20	40
Sum	306	299	605
Average	15.3	14.95	15.125
Variance	0.615789	0.576316	0.612179

*Rep3*

Count	20	20	40
Sum	299.5	294	593.5
Average	14.975	14.7	14.8375
Variance	0.380921	0.326316	0.363942

*Total*

Count	60	60	
Sum	902.5	884	
Average	15.04167	14.73333	
Variance	0.62959	0.419209	

**Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00**  
**Head Height (cm)**

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	3.7625	2	1.88125	3.692059	0.027948	3.075854
Varieties	2.852083	1	2.852083	5.597375	0.019675	3.924328
Interaction	0.029167	2	0.014583	0.028621	0.971792	3.075854
Within	58.0875	114	0.509539			
Total	64.73125	119				

**Anova: Two-Factor With Replication****SUMMARY**      Diamond      Durango      Total*Rep1*

Count	20	20	40
Sum	293	297	590
Average	14.65	14.85	14.75
Variance	0.292105	0.844737	0.564103

*Rep2*

Count	20	20	40
Sum	297.5	306	603.5
Average	14.875	15.3	15.0875
Variance	0.365132	0.615789	0.524199

*Rep3*

Count	20	20	40
Sum	298	299.5	597.5
Average	14.9	14.975	14.9375
Variance	0.542105	0.380921	0.451122

*Total*

Count	60	60
Sum	888.5	902.5
Average	14.80833	15.04167
Variance	0.399082	0.62959

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	2.2875	2	1.14375	2.256815	0.109341	3.075854
Varieties	1.633333	1	1.633333	3.222847	0.075267	3.924328
Interaction	0.629167	2	0.314583	0.620727	0.53936	3.075854
Within	57.775	114	0.506798			
Total	62.325	119				

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00

Head Height (cm)

	Wrangler	Durango	Silverado	Diamond
rep1	16.5	16	15.5	15
	16.5	16	15	16
	16	16	14	14.5
	16	16.5	14.5	17
	16.5	14	14	15
	17.5	15.5	16.5	15
	16.5	15.5	14.5	16.5
	16	16	17	17
	16.5	17	15	15
	15	15.5	16.5	15
	14.5	15.5	15	14.5
	14.5	16	14.5	15
	15.5	16.5	15.5	15.5
	14.5	14	16.5	15.5
	14.5	16	18.5	15.5
	16	15	16.5	14.5
	14.5	15	16.5	15.5
	16	16.5	15	15.5
	14	16.5	13.5	16
	16	15.5	15.5	15.5
	14.5	15	16.5	14
	15	15	16.5	16.5
	14.5	15.5	16.5	14
rep2	16.5	16	14.5	14.5
	16.5	17	14	16.5
	15.5	16.5	14.5	18
	16.5	18	15.5	16
	14.5	16	15.5	13.5
	17.5	14	15.5	13.5
	16	15.5	15	14.5
	15.5	14.5	15	14
	15	15	14	15
	16	16	14.5	15.5
	16.5	15.5	15.5	15.5
	16.5	16	14.5	16
	16.5	15	15	14.5
	14.5	14	14	16
	15.5	15.5	15	16
	16.5	16	15	14
	15.5	16	15.5	14.5
	17.5	15	15.5	14
	17	17	16	15
	14.5	15.5	15.5	16
	14.5	15.5	15.5	14.5
	16.5	16	16	15.5
	14	16.5	16	16
rep3	14.5	15.5	13.5	17
	15.5	16	15.5	13.5
	16	15.5	15	15.5
	15	16	13.5	14.5
	15	15	16.5	15.5
	14	15.5	16.5	15
	15.5	15.5	15	14
	14.5	18	14.5	13.5
	14	16	14.5	15
	14.5	16	16	15
	15.5	14.5	15.5	15
	14.5	16	16.5	15.5
	15	15	14.5	14
	14.5	15.5	15	15.5
	14.5	15	14.5	14.5
	14.5	17	16	15
	14	16	16	15
	15	16	16	15.5

## Durango PVP Worksheets

14.5	16	14.5	15.5
16	17	16.5	14
15	16	14.5	15.5
16.5	15.5	14.5	16
14.5	15.5	15	14.5

	Wrangler	Durango	Silverado	Diamond
Mean	15.42754	15.73913	15.28261	15.15942
Standard Error	0.11646	0.097719	0.114245	0.111895
Median	15.5	16	15	15
Mode	14.5	16	15.5	15.5
Standard Deviation	0.967393	0.811719	0.948987	0.929472
Sample Variance	0.935848	0.658887	0.900575	0.863917
Kurtosis	-0.99328	0.983097	0.646952	0.323874
Skewness	0.311326	0.19933	0.467786	0.393704
Range	3.5	4	5	4.5
Minimum	14	14	13.5	13.5
Maximum	17.5	18	18.5	18
Sum	1064.5	1086	1054.5	1046
Count	69	69	69	69

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00

Head Height (cm)

## Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep1</i>					
Count	23	23	23	23	92
Sum	357	360	358	353.5	1428.5
Average	15.52174	15.65217	15.56522	15.36957	15.52717
Variance	0.91996	0.578063	1.393281	0.709486	0.881122
<i>rep2</i>					
Count	23	23	23	23	92
Sum	365	362	347	348.5	1422.5
Average	15.86957	15.73913	15.08696	15.15217	15.46196
Variance	1.004941	0.883399	0.401186	1.1917	0.962823
<i>rep3</i>					
Count	23	23	23	23	92
Sum	342.5	364	349.5	344	1400
Average	14.8913	15.82609	15.19565	14.95652	15.21739
Variance	0.453657	0.559289	0.857708	0.679842	0.754419
<i>Total</i>					
Count	69	69	69	69	69
Sum	1064.5	1086	1054.5	1046	
Average	15.42754	15.73913	15.28261	15.15942	
Variance	0.935848	0.658887	0.900575	0.863917	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	4.907609	2	2.453804	3.056935	0.0487	3.029982
Varieties	12.93116	3	4.310386	5.369854	0.001327	2.638799
Interaction	11.60688	6	1.934481	2.409964	0.027651	2.133007
Within	211.913	264	0.802701			
Total	241.3587	275				

## Durango PVP Worksheets

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 09/16/00

Head Height (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
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*rep1*

Count	23	23	46
Sum	357	360	717
Average	15.52174	15.65217	15.58696
Variance	0.91996	0.578063	0.736715

*rep2*

Count	23	23	46
Sum	365	362	727
Average	15.86957	15.73913	15.80435
Variance	1.004941	0.883399	0.927536

*rep3*

Count	23	23	46
Sum	342.5	364	706.5
Average	14.8913	15.82609	15.3587
Variance	0.453557	0.559289	0.718478

*Total*

Count	69	69	
Sum	1064.5	1086	
Average	15.42754	15.73913	
Variance	0.935848	0.658887	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	4.568841	2	2.28442	3.115678	0.047626	3.064756
Varieties	3.349638	1	3.349638	4.568509	0.034408	3.912874
Interaction	7.09058	2	3.54529	4.835355	0.009408	3.064756
Within	96.78261	132	0.733202			
Total	111.7917	137				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
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*Rep1*

Count	23	23	46
Sum	360	358	718
Average	15.65217	15.56522	15.6087
Variance	0.578063	1.393281	0.9657

*Rep2*

Count	23	23	46
Sum	362	347	709
Average	15.73913	15.08696	15.41304
Variance	0.883399	0.401186	0.736715

*Rep3*

Count	23	23	46
Sum	364	349.5	713.5
Average	15.82609	15.19565	15.51087
Variance	0.559289	0.857708	0.794324

*Total*

Count	69	69	
Sum	1086	1054.5	
Average	15.73913	15.28261	
Variance	0.658887	0.900575	

Trial #4 Mcphearson Lot7 south, Salinas, California Evaluated 09/16/00  
 Head Height (cm)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	0.880435	2	0.440217	0.565236	0.569595	3.064756
Varieties	7.190217	1	7.190217	9.232184	0.002867	3.912874
Interaction	2.358696	2	1.179348	1.514274	0.223764	3.064756
Within	102.8043	132	0.778821			
Total	113.2337	137				

## Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
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*Rep1*

Count	23	23	46
Sum	353.5	360	713.5
Average	15.36957	15.65217	15.51087
Variance	0.709486	0.578063	0.649879

*Rep2*

Count	23	23	46
Sum	348.5	362	710.5
Average	15.15217	15.73913	15.44565
Variance	1.1917	0.883399	1.102536

*Rep3*

Count	23	23	46
Sum	344	364	708
Average	14.95652	15.82609	15.3913
Variance	0.679842	0.559289	0.799034

*Total*

Count	69	69	
Sum	1046	1086	
Average	15.15942	15.73913	
Variance	0.863917	0.658887	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	0.32971	2	0.164855	0.214945	0.806867	3.064756
Varieties	11.5942	1	11.5942	15.11703	0.000159	3.912874
Interaction	1.981884	2	0.990942	1.292033	0.278163	3.064756
Within	101.2391	132	0.766963			
Total	115.1449	137				

Trial #1 Panzierra Lot22, Salinas, California. Evaluated 09/13/00  
Core Length (mm)

	Wrangler	Durango	Silverado	Diamond
rep 1	40	53	45	60
	27	48	45	35
	40	50	35	50
	32	25	48	50
	37	30	38	50
	40	35	45	45
	40	35	40	45
	37	60	40	55
	40	48	30	35
	38	30	40	40
	42	40	40	40
	44	65	28	35
	37	38	35	40
	40	38	40	48
	38	20	48	40
	40	40	60	58
	27	38	35	43
	48	30	38	40
	55	45	30	40
	30	40	42	50
	35	40	35	30
	35	45	45	40
	30	30	45	50
Rep2	30	25	35	40
	45	30	40	50
	30	40	35	40
	40	35	40	30
	30	40	50	20
	35	40	40	40
	40	35	60	45
	40	25	50	45
	40	30	50	30
	30	40	20	40
	35	50	60	35
	35	35	40	35
	40	60	40	40
	35	50	55	45
	32	35	45	30
	40	50	40	60
	42	18	45	40
	45	40	30	60
	35	35	40	45
	50	40	50	40
	35	25	50	30
	48	45	40	55
	40	35	30	35
	35	40	60	45
	35	40	50	45

	Wrangler	Durango	Silverado	Diamond
Mean	37.79167	38.77083	42.125	42.47917
Standard Error	0.853631	1.446517	1.266251	1.263575
Median	38	40	40	40
Mode	40	40	40	40
Standard Deviation	5.914131	10.02176	8.772843	8.754305
Sample Variance	34.97695	100.4357	76.96277	76.63785
Kurtosis	0.584114	0.38005	0.243115	0.117114
Skewness	0.469225	0.386994	0.173206	0.094307
Range	28	47	40	40
Minimum	27	18	20	20
Maximum	55	65	60	60
Sum	1814	1861	2022	2039
Count	48	48	48	48

## Durango PVP Worksheets

Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00

Core Length (mm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
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rep 1

Count	24	24	24	24	96
Sum	902	948	962	1059	3871
Average	37.58333	39.5	40.08333	44.125	40.32292
Variance	41.55797	120.7826	49.2971	58.20109	71.06305

rep 2

Count	24	24	24	24	96
Sum	912	913	1060	980	3865
Average	38	38.04167	44.16667	40.83333	40.26042
Variance	29.82609	83.34601	99.27536	92.75362	80.36305

Total

Count	48	48	48	48
Sum	1814	1861	2022	2039
Average	37.79167	38.77083	42.125	42.47917
Variance	34.97695	100.4357	76.96277	76.63785

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	0.1875	1	0.1875	0.002609	0.959322	3.892495
Varieties	802.0417	3	267.3472	3.719356	0.012496	2.653692
Interaction	357.5208	3	119.1736	1.657953	0.177667	2.653692
Within	13225.92	184	71.87998			
Total	14385.67	191				

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
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rep 1

Count	24	24	48
Sum	902	948	1850
Average	37.58333	39.5	38.54167
Variance	41.55797	120.7826	80.38121

Count	24	24	48
Sum	912	913	1825
Average	38	38.04167	38.02083
Variance	29.82609	83.34601	55.38254

Total

Count	48	48
Sum	1814	1861
Average	37.79167	38.77083
Variance	34.97695	100.4357

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	6.510417	1	6.510417	0.094521	0.759202	3.944535
Varieties	23.01042	1	23.01042	0.334074	0.564682	3.944535
Interaction	21.09375	1	21.09375	0.306247	0.581335	3.944535
Within	6336.792	92	68.87817			
Total	6387.406	95				

**Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00**  
**Core Length (mm)**

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
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*Rep1*

Count	24	24	48
Sum	948	962	1910
Average	39.5	40.08333	39.79167
Variance	120.7826	49.2971	83.31738

*Rep2*

Count	24	24	48
Sum	913	1060	1973
Average	38.04167	44.16667	41.10417
Variance	83.34601	99.27536	98.94637

*Total*

Count	48	48
Sum	1861	2022
Average	38.77083	42.125
Variance	100.4357	76.96277

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	41.34375	1	41.34375	0.468881	0.495224	3.944535
Varieties	270.0104	1	270.0104	3.062201	0.083467	3.944535
Interaction	184.2604	1	184.2604	2.089706	0.151692	3.944535
Within	8112.125	92	88.17527			
Total	8607.74	95				

Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
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*Rep1*

Count	24	24	48
Sum	1059	948	2007
Average	44.125	39.5	41.8125
Variance	58.20109	120.7826	93.0492

*Rep2*

Count	24	24	48
Sum	980	913	1893
Average	40.83333	38.04167	39.4375
Variance	92.75362	83.34601	88.16622

*Total*

Count	48	48
Sum	2039	1861
Average	42.47917	38.77083
Variance	76.63785	100.4357

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	135.375	1	135.375	1.524994	0.22001	3.944535
Varieties	330.0417	1	330.0417	3.717907	0.056916	3.944535
Interaction	20.16667	1	20.16667	0.227177	0.634755	3.944535
Within	8166.917	92	88.77083			
Total	8652.5	95				

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Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00

Core Length (mm)

	Wrangler	Durango	Silverado	Diamond
Rep1	55	37	50	42
	41	42	38	42
	47	42	39	57
	50	41	30	52
	36	62	50	56
	43	57	40	60
	32	39	28	60
	45	58	39	50
	35	52	49	57
	44	60	38	52
	44	43	33	41
	42	25	38	42
	40	49	36	36
	47	42	54	50
	48	36	39	48
	34	39	36	60
	62	43	49	40
	43	40	39	45
	46	50	42	39
	55	38	36	29
	47	48	40	45
	46	45	40	40
	38	39	40	39
	37	41	55	40
Rep2	40	50	51	60
	59	40	38	25
	45	40	47	45
	49	55	38	40
	42	50	50	48
	40	40	53	40
	48	35	48	50
	39	35	36	48
	40	50	35	27
	40	42	40	35
	32	42	45	30
	40	46	45	50
	40	30	45	43
	52	40	47	50
	43	38	49	45
	30	46	47	40
	39	46	48	30
	45	30	44	28
	56	60	35	50
	50	65	52	45
	50	42	50	35
	31	27	40	40
	55	40	35	45
	40	40	45	40
Rep3	63	40	40	60
	27	28	35	55
	33	35	30	60
	40	50	26	48
	50	45	50	30
	30	30	40	45
	42	40	38	50
	37	20	45	30
	40	40	45	50
	42	35	40	55
	55	40	50	60
	47	40	42	33
	35	40	40	50
	58	30	40	30
	35	40	50	55
	53	40	50	50

## Durango PVP Worksheets

35	55	30	50
27	45	60	40
57	30	40	55
35	48	40	60
45	40	50	50
48	55	50	40
27	40	50	32
37	25	40	40

	Wrangler	Durango	Silverado	Diamond
Mean	43.05556	42.05556	42.52778	44.84722
Standard Error	0.996451	1.062574	0.823646	1.103356
Median	42	40	40	45
Mode	40	40	40	50
Standard Deviation	8.455166	9.016243	6.988869	9.362285
Sample Variance	71.48983	81.29264	48.84429	87.65239
Kurtosis	-0.33125	0.328956	-0.38248	-0.7185
Skewness	0.251316	0.242084	-0.02714	-0.18795
Range	36	45	34	35
Minimum	27	20	26	25
Maximum	63	65	60	60
Sum	3100	3028	3062	3229
Count	72	72	72	72

## Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep 1</i>					
Count	24	24	24	24	96
Sum	1057	1068	978	1122	4225
Average	44.04167	44.5	40.75	46.75	44.01042
Variance	50.38949	74.52174	49.15217	73.67391	64.62094
<i>rep 2</i>					
Count	24	24	24	24	96
Sum	1045	1029	1063	989	4126
Average	43.54167	42.875	44.29167	41.20833	42.97917
Variance	58.25906	82.375	33.1721	77.82428	62.23114
<i>rep 3</i>					
Count	24	24	24	24	96
Sum	998	931	1021	1118	4068
Average	41.58333	38.79167	42.54167	46.58333	42.375
Variance	108.5145	75.99819	61.91123	98.34058	91.35263
<i>Total</i>					
Count	72	72	72	72	
Sum	3100	3028	3062	3229	
Average	43.05556	42.05556	42.52778	44.84722	
Variance	71.48983	81.29264	48.84429	87.65239	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	131.2986	2	65.64931	0.933256	0.394508	3.028489
Varieties	321.9271	3	107.309	1.525482	0.208126	2.637307
Interaction	992.4792	6	165.4132	2.351478	0.03125	2.1315
Within	19415.04	276	70.34435			
Total	20860.75	287				

Trial #3 Cooper Lot 2, Salinas, California Evaluated 08/14/00

## Core Length (mm)

	Wrangler	Durango	Silverado	Diamond
rep1	35	38	24	21
	30	22	23	41
	39	27	37	39
	37	34	31	32
	40	41	26	30
	30	34	21	36
	38	42	29	32
	29	25	27	24
	24	47	30	32
	29	39	31	31
	33	40	36	40
	23	35	42	29
	36	25	35	38
	29	40	30	36
	30	25	28	39
	35	34	31	30
	28	37	42	37
	27	41	30	44
	41	37	28	33
	56	25	27	23
rep2	39	30	21	40
	34	35	34	28
	45	29	23	41
	33	30	40	41
	29	38	32	37
	29	38	30	32
	42	40	42	33
	37	40	26	32
	40	30	43	46
	38	40	34	42
	40	45	32	45
	41	29	25	35
	25	29	40	45
	30	26	37	27
	28	38	33	42
	38	45	35	33
	40	40	30	39
	29	35	29	32
	38	35	30	40
	46	35	30	36
rep3	45	25	39	41
	32	49	31	42
	34	27	35	41
	43	41	37	33
	31	37	28	40
	40	35	29	32
	43	36	41	40
	34	40	25	30
	49	35	28	27
	40	29	25	39
	37	33	28	37
	30	37	25	29
	40	35	48	30
	45	34	37	36
	38	30	25	30
	37	25	31	21
	45	38	42	39
	30	34	33	35
	35	40	25	35
	44	33	29	36

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Core Length (mm)

	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	
Mean	36.03333	34.8	31.58333	35.1	
Standard Error	0.860616	0.789693	0.790227	0.767526	
Median	37	35	30	36	
Mode	40	40	30	32	
Standard Deviation	6.666299	6.11694	6.121071	5.94523	
Sample Variance	44.43955	37.41695	37.46751	35.34576	
Kurtosis	0.06704	-0.46997	-0.26698	-0.29627	
Skewness	0.321248	-0.10074	0.542241	-0.39313	
Range	33	27	27	25	
Minimum	23	22	21	21	
Maximum	56	49	48	46	
Sum	2162	2088	1895	2106	
Count	60	60	60	60	

## Anova: Two-Factor With Replication

SUMMARY	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	Total
<i>rep1</i>					
Count	20	20	20	20	80
Sum	669	688	608	667	2632
Average	33.45	34.4	30.4	33.35	32.9
Variance	55.20789	51.41053	31.93684	38.34474	44.82532
<i>rep2</i>					
Count	20	20	20	20	80
Sum	721	707	646	746	2820
Average	36.05	35.35	32.3	37.3	35.25
Variance	36.47105	30.97632	36.95789	31.8	36.18987
<i>rep3</i>					
Count	20	20	20	20	80
Sum	772	693	641	693	2799
Average	38.6	34.65	32.05	34.65	34.9875
Variance	32.35789	33.29211	45.20789	31.08158	39.68339
<i>Total</i>					
Count	60	60	60	60	
Sum	2162	2088	1895	2106	
Average	36.03333	34.8	31.58333	35.1	
Variance	44.43955	37.41695	37.46751	35.34576	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	265.3083	2	132.6542	3.498227	0.031885	3.035439
Varieties	674.9792	3	224.9931	5.933299	0.00065	2.644192
Interaction	214.3583	6	35.72639	0.942142	0.465571	2.138492
Within	8645.85	228	37.92039			
Total	9800.496	239				

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Core Length (mm)

Anova: Two-Factor With Replication

SUMMARY Wrangler Durango Total

rep1

Count	20	20	40
Sum	669	688	1357
Average	33.45	34.4	33.925
Variance	55.20789	51.41053	52.17372

rep2

Count	20	20	40
Sum	721	707	1428
Average	36.05	35.35	35.7
Variance	36.47105	30.97632	32.98462

rep3

Count	20	20	40
Sum	772	693	1465
Average	38.6	34.65	36.625
Variance	32.35789	33.29211	35.98397

Total

Count	60	60
Sum	2162	2088
Average	36.03333	34.8
Variance	44.43955	37.41695

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	150.6167	2	75.30833	1.88494	0.15654	3.075854
Varieties	45.63333	1	45.63333	1.142186	0.287449	3.924328
Interaction	124.3167	2	62.15833	1.555801	0.215467	3.075854
Within	4554.6	114	39.95263			
Total	4875.167	119				

Anova: Two-Factor With Replication

SUMMARY Durango Silverado Total

Rep1

Count	20	20	40
Sum	688	608	1296
Average	34.4	30.4	32.4
Variance	51.41053	31.93684	44.70769

Rep2

Count	20	20	40
Sum	707	646	1353
Average	35.35	32.3	33.825
Variance	30.97632	36.95789	35.48141

Rep3

Count	20	20	40
Sum	693	641	1334
Average	34.65	32.05	33.35
Variance	33.29211	45.20789	39.97692

Total

Count	60	60
Sum	2088	1895
Average	34.8	31.58333
Variance	37.41695	37.46751

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Core Length (mm)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	42.11667	2	21.05833	0.54987	0.578547	3.075854
Varieties	310.4083	1	310.4083	8.105306	0.005236	3.924328
Interaction	10.21667	2	5.108333	0.133388	0.875262	3.075854
Within	4365.85	114	38.29693			
Total	4728.592	119				

Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
<i>Rep1</i>			
Count	20	20	40
Sum	667	688	1355
Average	33.35	34.4	33.875
Variance	38.34474	51.41053	44.00962
<i>Rep2</i>			
Count	20	20	40
Sum	746	707	1453
Average	37.3	35.35	36.325
Variance	31.8	30.97632	31.55833
<i>Rep3</i>			
Count	20	20	40
Sum	693	693	1386
Average	34.65	34.65	34.65
Variance	31.08158	33.29211	31.36154
<i>Total</i>			
Count	60	60	
Sum	2106	2088	
Average	35.1	34.8	
Variance	35.34576	37.41695	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	125.45	2	62.725	1.735089	0.18101	3.075854
Varieties	2.7	1	2.7	0.074687	0.785125	3.924328
Interaction	46.35	2	23.175	0.641063	0.52862	3.075854
Within	4121.2	114	36.15088			
Total	4295.7	119				

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00

Core Length (mm)

	Wrangler	Durango	Silverado	Diamond
rep1	34	42	31	41
	31	40	35	55
	34	28	36	29
	45	60	42	50
	43	40	32	53
	21	23	52	24
	45	46	43	26
	57	40	54	35
	58	46	43	41
	42	40	21	37
	55	30	38	34
	42	42	38	41
	29	50	51	46
	26	52	42	46
	37	55	44	43
	33	39	16	27
	45	28	24	44
	61	58	26	36
	31	42	18	43
	44	35	44	40
	23	46	48	46
	22	73	48	42
	26	58	54	19
rep2	27	39	31	35
	55	50	35	50
	52	52	31	38
	42	70	53	56
	40	50	26	37
	69	39	39	52
	37	56	32	37
	40	38	32	39
	59	43	36	40
	53	42	70	41
	53	35	49	50
	50	61	39	47
	65	36	46	42
	35	36	36	28
	42	51	30	50
	30	41	51	46
	32	40	28	47
	64	46	50	46
	26	48	42	61
	32	49	49	55
	56	45	49	41
	31	41	31	62
	45	48	59	58
rep3	51	49	40	70
	35	45	25	40
	49	52	27	40
	55	54	25	30
	58	47	27	18
	50	60	52	32
	34	43	46	26
	39	35	49	27
	35	55	43	64
	41	51	31	47
	48	65	24	54
	41	62	52	46
	45	49	30	42
	45	48	24	24
	46	62	41	40
	62	45	63	28
	34	52	37	37
	43	51	52	37

36	43	23	29
35	80	40	23
30	54	31	35
70	69	23	30
40	36	44	26

**Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00**  
Core Length (mm)

	Wrangler	Durango	Silverado	Diamond
Mean	42.62319	47.33333	38.73913	40.5942
Standard Error	1.42728	1.273821	1.373953	1.334237
Median	42	46	39	41
Mode	45	40	31	46
Standard Deviation	11.85588	10.58115	11.41291	11.083
Sample Variance	140.5618	111.9608	130.2545	122.8329
Kurtosis	-0.54836	0.783894	-0.3878	-0.12077
Skewness	0.339439	0.49409	0.228154	0.228938
Range	49	57	54	52
Minimum	21	23	16	18
Maximum	70	80	70	70
Sum	2941	3266	2673	2801
Count	69	69	69	69

## Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep1</i>					
Count	23	23	23	23	92
Sum	884	1013	880	898	3675
Average	38.43478	44.04348	38.26087	39.04348	39.94565
Variance	141.3478	138.7708	129.1107	85.95257	125.4586
<i>rep2</i>					
Count	23	23	23	23	92
Sum	1035	1056	944	1058	4093
Average	45	45.91304	41.04348	46	44.48913
Variance	165.0909	72.99209	126.3162	77.90909	111.0878
<i>rep3</i>					
Count	23	23	23	23	92
Sum	1022	1197	849	845	3913
Average	44.43478	52.04348	36.91304	36.73913	42.53261
Variance	100.3478	97.67984	137.9012	167.2016	161.878
<i>Total</i>					
Count	69	69	69	69	
Sum	2941	3266	2673	2801	
Average	42.62319	47.33333	38.73913	40.5942	
Variance	140.5618	111.9608	130.2545	122.8329	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	955.6812	2	477.8406	3.98029	0.019812	3.029982
Varieties	2830.822	3	943.6075	7.860009	4.83E-05	2.638799
Interaction	1732.145	6	288.6908	2.404721	0.027967	2.133007
Within	31693.65	264	120.0517			
Total	37212.3	275				

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Trial #4 Mcphearson Lot7 south, Salinas, California Evaluated 08/16/00

Core Length (mm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
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*rep1*

Count	23	23	46
Sum	884	1013	1897
Average	38.43478	44.04348	41.23913
Variance	141.3478	138.7708	144.986

*rep2*

Count	23	23	46
Sum	1035	1056	2091
Average	45	45.91304	45.45652
Variance	165.0909	72.99209	116.6092

*rep3*

Count	23	23	46
Sum	1022	1197	2219
Average	44.43478	52.04348	48.23913
Variance	100.3478	97.67984	111.6082

*Total*

Count	69	69	
Sum	2941	3266	
Average	42.62319	47.33333	
Variance	140.5618	111.9608	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	1142.783	2	571.3913	4.786663	0.009842	3.064756
Varieties	765.3986	1	765.3986	6.411901	0.012508	3.912874
Interaction	271.7101	2	135.8551	1.138086	0.323555	3.064756
Within	15757.04	132	119.3715			
<b>Total</b>	<b>17936.93</b>	<b>137</b>				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
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*Rep1*

Count	23	23	46
Sum	1013	880	1893
Average	44.04348	38.26087	41.15217
Variance	138.7708	129.1107	139.5097

*Rep2*

Count	23	23	46
Sum	1056	944	2000
Average	45.91304	41.04348	43.47826
Variance	72.99209	126.3162	103.4995

*Rep3*

Count	23	23	46
Sum	1197	849	2046
Average	52.04348	36.91304	44.47826
Variance	97.67984	137.9012	173.6773

*Total*

Count	69	69	
Sum	3266	2673	
Average	47.33333	38.73913	
Variance	111.9608	130.2545	

Trial #4 Mcphearson Lot7 south, Salinas, California Evaluated 08/16/00

Core Length (mm)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	267.9275	2	133.9638	1.143734	0.321764	3.064756
Varieties	2548.181	1	2548.181	21.75544	7.49E-06	3.912874
Interaction	741.7536	2	370.8768	3.166411	0.045375	3.064756
Within	15460.96	132	117.1285			
Total	19018.82	137				

Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
<i>Rep1</i>			
Count	23	23	46
Sum	898	1013	1911
Average	39.04348	44.04348	41.54348
Variance	85.95257	138.7708	116.2536
<i>Rep2</i>			
Count	23	23	46
Sum	1058	1056	2114
Average	46	45.91304	45.95652
Variance	77.90909	72.99209	73.77585
<i>Rep3</i>			
Count	23	23	46
Sum	845	1197	2042
Average	36.73913	52.04348	44.3913
Variance	167.2016	97.67984	189.3546
<i>Total</i>			
Count	69	69	
Sum	2801	3266	
Average	40.5942	47.33333	
Variance	122.8329	111.9608	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	460.5362	2	230.2681	2.157058	0.119725	3.064756
Varieties	1566.848	1	1566.848	14.6776	0.000196	3.912874
Interaction	1414.304	2	707.1522	6.624315	0.001813	3.064756
Within	14091.13	132	106.751			
Total	17532.82	137				

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**Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00**

Core Diameter (mm)

	Wrangler	Durango	Silverado	Diamond
rep 1	39	40	37	35
	37	38	36	31
	35	35	33	35
	39	32	35	30
	37	37	38	33
	38	38	35	36
	37	33	37	35
	40	39	35	37
	36	38	32	35
	41	36	35	34
	38	40	35	36
	37	40	33	35
	40	38	35	37
	37	38	38	39
	38	33	35	34
	40	37	33	34
	34	35	31	33
	37	40	35	37
	36	38	37	35
	33	37	32	35
	35	35	35	33
	36	36	39	35
	37	37	38	33
Rep2	38	37	35	36
	42	40	40	36
	37	40	35	37
	37	35	30	37
	40	37	40	33
	35	35	32	38
	40	35	35	40
	40	33	35	35
	40	38	30	35
	35	40	25	33
	40	39	38	40
	38	35	35	34
	35	40	33	40
	38	40	35	35
	38	40	35	33
	37	40	36	40
	38	35	35	36
	40	37	35	38
	35	36	33	34
	40	39	36	37
	35	35	37	35
	35	40	35	35
	38	37	35	32
	35	40	38	36
	35	38	35	38

	Wrangler	Durango	Silverado	Diamond
Mean	37.45833	37.3125	34.9375	35.41667
Standard Error	0.302118	0.329081	0.389815	0.331333
Median	37	37.5	35	35
Mode	37	40	35	35
Standard Deviation	2.093133	2.279943	2.700719	2.29554
Sample Variance	4.381206	5.198138	7.293883	5.269504
Kurtosis	-0.771257	-0.69204	2.968258	0.053801
Skewness	0.05385	-0.448677	-0.999377	0.199957
Range	9	8	15	10
Minimum	33	32	25	30
Maximum	42	40	40	40
Sum	1798	1791	1677	1700
Count	48	48	48	48

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Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00

Core Diameter (mm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
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*rep 1*

Count	24	24	24	24	96
Sum	895	887	844	833	3459
Average	37.29167	36.95833	35.16667	34.70833	36.03125
Variance	3.867754	5.085145	4.405797	3.867754	5.420066

*rep 2*

Count	24	24	24	24	96
Sum	903	904	833	867	3507
Average	37.625	37.66667	34.70833	36.125	36.53125
Variance	5.027174	5.275362	10.38949	5.853261	7.935855

*Total*

Count	48	48	48	48
Sum	1798	1791	1677	1700
Average	37.45833	37.3125	34.9375	35.41667
Variance	4.381206	5.198138	7.293883	5.269504

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	12	1	12	2.193196	0.140332	3.892495
Varieties	240.1042	3	80.03472	14.62765	1.39E-08	2.653692
Interaction	21.95833	3	7.319444	1.337748	0.26354	2.653692
Within	1006.75	184	5.471467			
<b>Total</b>	<b>1280.813</b>	<b>191</b>				

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
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*rep 1*

Count	24	24	48
Sum	895	887	1782
Average	37.29167	36.95833	37.125
Variance	3.867754	5.085145	4.409574

*Rep2*

Count	24	24	48
Sum	903	904	1807
Average	37.625	37.66667	37.64583
Variance	5.027174	5.275362	5.04211

*Total*

Count	48	48
Sum	1798	1791
Average	37.45833	37.3125
Variance	4.381206	5.198138

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	6.510417	1	6.510417	1.352432	0.247861	3.944535
Varieties	0.510417	1	0.510417	0.106031	0.745449	3.944535
Interaction	0.84375	1	0.84375	0.175275	0.676441	3.944535
Within	442.875	92	4.813859			
<b>Total</b>	<b>450.7396</b>	<b>95</b>				

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Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00  
Core Diameter (mm)

## Anova: Two-Factor With Replication

## SUMMARY Durango Silverado Total

*rep 1*

Count	24	24	48
Sum	887	844	1731
Average	36.95833	35.16667	36.0625
Variance	5.085145	4.405797	5.464096

*rep 2*

Count	24	24	48
Sum	904	833	1737
Average	37.66667	34.70833	36.1875
Variance	5.275362	10.38949	9.900266

*Total*

Count	48	48
Sum	1791	1677
Average	37.3125	34.9375
Variance	5.198138	7.293883

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	0.375	1	0.375	0.059628	0.807628	3.944535
Columns	135.375	1	135.375	21.52585	1.15E-05	3.944535
Interaction	8.166667	1	8.166667	1.298574	0.257432	3.944535
Within	578.5833	92	6.288949			
<b>Total</b>	<b>722.5</b>	<b>95</b>				

## Anova: Two-Factor With Replication

## SUMMARY Diamond Durango Total

*Rep1*

Count	24	24	48
Sum	833	887	1720
Average	34.70833	36.95833	35.83333
Variance	3.867754	5.085145	5.673759

*Rep2*

Count	24	24	48
Sum	867	904	1771
Average	36.125	37.66667	36.89583
Variance	5.853261	5.275362	6.052748

*Total*

Count	48	48
Sum	1700	1791
Average	35.41667	37.3125
Variance	5.269504	5.198138

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	27.09375	1	27.09375	5.396752	0.022379	3.944535
Varieties	86.26042	1	86.26042	17.18205	7.55E-05	3.944535
Interaction	3.010417	1	3.010417	0.599639	0.440701	3.944535
Within	461.875	92	5.02038			
<b>Total</b>	<b>578.2396</b>	<b>95</b>				

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**Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00**

Core Diameter (mm)

	Wrangler	Durango	Silverado	Diamond
rep1	36	37	36	36
	33	37	32	37
	34	35	34	39
	36	41	35	36
	25	41	39	36
	38	40	33	38
	25	38	30	37
	37	41	37	36
	32	43	37	38
	36	42	34	40
	35	36	30	35
	38	35	36	35
	37	40	35	30
	38	37	39	35
	35	38	36	37
	28	40	30	39
	40	40	38	40
	38	39	36	35
	39	40	36	35
	38	39	39	29
	37	40	35	39
	34	40	35	35
	39	38	35	37
rep2	38	35	40	35
	36	43	31	37
	38	40	39	30
	41	37	36	36
	38	37	36	36
	36	41	33	35
	39	42	33	37
	38	35	34	38
	41	35	31	36
	35	40	35	36
	38	39	33	37
	34	37	35	30
	40	35	34	40
	40	35	39	39
	39	38	40	35
	37	36	37	37
	40	39	40	38
	37	37	36	40
	36	38	37	39
	43	44	37	35
	40	41	38	43
	41	40	37	30
	42	33	35	38
	37	40	35	40
	40	37	35	35
rep3	40	36	40	35
	40	30	35	37
	35	38	30	35
	43	40	26	37
	36	36	35	33
	35	35	35	35
	39	40	36	35
	39	25	36	34
	37	40	36	35
	37	40	38	35
	39	40	33	37
	41	42	33	33
	37	38	30	35
	36	35	37	30
	40	37	37	35
	40	50	40	35

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37	40	35	40
30	40	38	35
41	40	36	35
38	38	35	40
41	40	37	45
36	35	35	32
40	35	35	37
40	40	38	33

	Wrangler	Durango	Silverado	Diamond
Mean	37.33333	38.34722	35.40278	36.09722
Standard Error	0.407769	0.391698	0.331367	0.347222
Median	38	39	35.5	36
Mode	40	40	35	35
Standard Deviation	3.460033	3.323666	2.811745	2.946278
Sample Variance	11.97183	11.04675	7.905908	8.680556
Kurtosis	3.581961	4.43955	0.923978	1.071548
Skewness	-1.52996	-0.512552	-0.703815	-0.040119
Range	18	25	14	16
Minimum	25	25	26	29
Maximum	43	50	40	45
Sum	2688	2761	2549	2599
Count	72	72	72	72

**Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00**

Core Diameter (mm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep 1</i>					
Count	24	24	24	24	96
Sum	845	932	847	869	3493
Average	35.20833	38.83333	35.29167	36.20833	36.385417
Variance	16.86775	5.014493	7.95471	7.041667	11.102522
<i>rep 2</i>					
Count	24	24	24	24	96
Sum	926	919	856	877	3578
Average	38.58333	38.29167	35.66667	36.54167	37.270833
Variance	5.297101	7.867754	6.318841	10.25906	8.6837719
<i>rep3</i>					
Count	24	24	24	24	96
Sum	917	910	846	853	3526
Average	38.20833	37.91667	35.25	35.54167	36.729167
Variance	7.650362	20.77536	10.02174	8.95471	13.294298
<i>Total</i>					
Count	72	72	72	72	
Sum	2688	2761	2549	2599	
Average	37.33333	38.34722	35.40278	36.09722	
Variance	11.97183	11.04675	7.905908	8.680556	

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	38.25694	2	19.12847	2.013108	0.1355296	3.028489
Varieties	368.9549	3	122.985	12.94311	6.179E-08	2.637307
Interaction	151.1597	6	25.19329	2.651377	0.0162076	2.1315
Within	2622.542	276	9.501963			
Total	3180.913	287				

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**Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00**

Core Diameter (mm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
<i>rep 1</i>			
Count	24	24	48
Sum	845	932	1777
Average	35.20833	38.83333	37.02083
Variance	16.86775	5.014493	14.06339
<i>rep 2</i>			
Count	24	24	48
Sum	926	919	1845
Average	38.58333	38.29167	38.4375
Variance	5.297101	7.867754	6.464096
<i>rep3</i>			
Count	24	24	48
Sum	917	910	1827
Average	38.20833	37.91667	38.0625
Variance	7.650362	20.77536	13.93218
<i>Total</i>			
Count	72	72	
Sum	2688	2761	
Average	37.33333	38.34722	
Variance	11.97183	11.04675	

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	51.72222	2	25.86111	2.444616	0.0905089	3.061714
Varieties	37.00694	1	37.00694	3.498216	0.0635531	3.909733
Interaction	122.7222	2	61.36111	5.800382	0.0038126	3.061714
Within	1459.875	138	10.5788			
Total	1671.326	143				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>Rep1</i>			
Count	24	24	48
Sum	932	847	1779
Average	38.83333	35.29167	37.0625
Variance	5.014493	7.95471	9.549202
<i>Rep2</i>			
Count	24	24	48
Sum	919	856	1775
Average	38.29167	35.66667	36.97917
Variance	7.867754	6.318841	8.701684
<i>Rep3</i>			
Count	24	24	48
Sum	910	846	1756
Average	37.91667	35.25	36.58333
Variance	20.77536	10.02174	16.88652
<i>Total</i>			
Count	72	72	
Sum	2761	2549	
Average	38.34722	35.40278	
Variance	11.04675	7.905908	

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**Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00**

Core Diameter (mm)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	6.291667	2	3.145833	0.325696	0.7225785	3.061714
Columns	312.1111	1	312.1111	32.3136	7.503E-08	3.909733
Interaction	6.430556	2	3.215278	0.332885	0.7174264	3.061714
Within	1332.917	138	9.658818			
Total	1657.75	143				

## Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
<i>rep 1</i>			
Count	24	24	48
Sum	869	932	1801
Average	36.20833	38.83333	37.52083
Variance	7.041667	5.014493	7.659131
<i>rep 2</i>			
Count	24	24	48
Sum	877	919	1796
Average	36.54167	38.29167	37.41667
Variance	10.25906	7.867754	9.652482
<i>rep 3</i>			
Count	24	24	48
Sum	853	910	1763
Average	35.54167	37.91667	36.72917
Variance	8.95471	20.77536	15.98892
<i>Total</i>			
Count	72	72	
Sum	2599	2761	
Average	36.09722	38.34722	
Variance	8.680556	11.04675	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	17.76389	2	8.881944	0.889484	0.4132101	3.061714
Columns	182.25	1	182.25	18.25145	3.584E-05	3.909733
Interaction	4.875	2	2.4375	0.244104	0.7837439	3.061714
Within	1378	138	9.985507			
Total	1582.889	143				

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Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Core Diameter (mm)

	Wrangler	Durango	Silverado	Diamond
rep 1	40	37	29	29
	32	29	30	33
	37	29	31	35
	34	35	27	30
	41	31	29	30
	36	36	29	32
	38	35	32	30
	36	32	29	28
	33	37	31	30
	34	37	32	32
	37	35	34	32
	32	35	31	33
	37	34	36	32
	38	35	30	28
	33	29	29	32
	35	34	31	27
	33	37	53	36
	33	30	31	36
	35	37	31	30
	35	30	29	29
rep2	40	35	26	35
	37	37	33	30
	35	37	30	35
	40	34	30	35
	34	37	32	34
	33	37	32	33
	37	35	32	33
	37	35	30	34
	38	35	33	34
	36	37	30	33
	39	37	32	31
	35	35	33	35
	35	38	35	35
	37	33	28	35
	31	33	37	38
	35	38	35	34
	37	34	31	31
	37	34	32	33
	35	35	31	33
	38	34	34	34
rep3	38	29	33	45
	36	37	29	43
	38	33	29	43
	37	36	35	31
	34	37	27	33
	35	38	33	32
	35	37	31	33
	34	38	27	30
	38	38	27	30
	38	32	25	35
	34	36	32	33
	38	35	30	30
	34	35	31	32
	36	32	31	35
	37	33	30	31
	35	33	33	30
	35	35	35	31
	33	35	29	32
	38	38	29	33
	36	37	27	35

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**Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00**

Core Diameter (mm)

	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	
Mean	35.9	34.8	31.21667	32.93333	
Standard Error	0.282943	0.326599	0.491218	0.43431	
Median	36	35	31	33	
Mode	35	37	31	33	
Standard Deviation	2.191684	2.529822	3.804955	3.364151	
Sample Variance	4.80339	6.4	14.47768	11.31751	
Kurtosis	-0.401988	0.058438	17.60928	3.650767	
Skewness	0.081757	-0.858722	3.190272	1.479898	
Range	10	9	28	18	
Minimum	31	29	25	27	
Maximum	41	38	53	45	
Sum	2154	2088	1873	1976	
Count	60	60	60	60	

**Anova: Two-Factor With Replication**

SUMMARY	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	Total
<i>rep 1</i>					
Count	20	20	20	20	80
Sum	709	674	634	624	2641
Average	35.45	33.7	31.7	31.2	33.0125
Variance	6.576316	9.063158	29.06316	6.589474	15.22769
<i>rep2</i>					
Count	20	20	20	20	80
Sum	726	710	636	675	2747
Average	36.3	35.5	31.8	33.75	34.3375
Variance	5.063158	2.578947	6.273684	3.144737	7.137816
<i>rep3</i>					
Count	20	20	20	20	80
Sum	719	704	603	677	2703
Average	35.95	35.2	30.15	33.85	33.7875
Variance	2.892105	6.273684	7.818421	20.68053	14.09351
<i>Total</i>					
Count	60	60	60	60	
Sum	2154	2088	1873	1976	
Average	35.9	34.8	31.21667	32.93333	
Variance	4.80339	6.4	14.47768	11.31751	

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	70.9	2	35.45	4.013307	0.019365	3.035439
Varieties	768.2458	3	256.0819	28.99113	6.44E-16	2.644192
Interaction	98.06667	6	16.34444	1.85036	0.090414	2.138492
Within	2013.95	228	8.833114			
Total	2951.162	239				

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Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Core Diameter (mm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
<i>rep 1</i>			
Count	20	20	40
Sum	709	674	1383
Average	35.45	33.7	34.575
Variance	6.576316	9.063158	8.404487
<i>rep2</i>			
Count	20	20	40
Sum	726	710	1436
Average	36.3	35.5	35.9
Variance	5.063158	2.578947	3.887179
<i>rep3</i>			
Count	20	20	40
Sum	719	704	1423
Average	35.95	35.2	35.575
Variance	2.892105	6.273684	4.609615
<i>Total</i>			
Count	60	60	
Sum	2154	2088	
Average	35.9	34.8	
Variance	4.80339	6.4	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	36.15	2	19.075	3.527251	0.032633	3.075854
Varieties	36.3	1	36.3	6.712409	0.010825	3.924328
Interaction	6.35	2	3.175	0.587105	0.557607	3.075854
Within	616.5	114	5.407895			
Total	697.3	119				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>Rep1</i>			
Count	20	20	40
Sum	674	634	1308
Average	33.7	31.7	32.7
Variance	9.063158	29.06316	19.6
<i>Rep2</i>			
Count	20	20	40
Sum	710	636	1346
Average	35.5	31.8	33.65
Variance	2.578947	6.273684	7.823077
<i>Rep3</i>			
Count	20	20	40
Sum	704	603	1307
Average	35.2	30.15	32.675
Variance	6.273684	7.818421	13.40449
<i>Total</i>			
Count	60	60	
Sum	2088	1873	
Average	34.8	31.21667	
Variance	6.4	14.47768	

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Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Core Diameter (mm)

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	24.71667	2	12.35833	1.21416	0.30077	3.075854
Columns	385.2083	1	385.2083	37.84526	1.17E-08	3.924328
Interaction	46.71667	2	23.35833	2.294868	0.105412	3.075854
Within	1160.35	114	10.17851			
Total	1616.992	119				

Anova: Two-Factor With Replication

SUMMARY	Diamond	Durango	Total
<i>Rep 1</i>			
Count	20	20	40
Sum	624	674	1298
Average	31.2	33.7	32.45
Variance	6.589474	9.063158	9.228205
<i>Rep 2</i>			
Count	20	20	40
Sum	675	710	1385
Average	33.75	35.5	34.625
Variance	3.144737	2.578947	3.573718
<i>Rep 3</i>			
Count	20	20	40
Sum	677	704	1381
Average	33.85	35.2	34.525
Variance	20.66053	6.273684	13.5891
<i>Total</i>			
Count	60	60	
Sum	1976	2088	
Average	32.93333	34.8	
Variance	11.31751	6.4	

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	120.6167	2	60.30833	7.490086	0.000879	3.075854
Columns	104.5333	1	104.5333	12.98268	0.000467	3.924328
Interaction	6.816667	2	3.408333	0.423303	0.655905	3.075854
Within	917.9	114	8.051754			
Total	1149.867	119				

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**Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00**

Core Diameter (mm)

	Wrangler	Durango	Silverado	Diamond
rep1	31	33	30	29
	34	35	29	30
	34	30	24	28
	34	34	28	34
	33	29	26	29
	32	31	29	29
	34	31	28	33
	33	31	32	32
	32	36	26	13
	34	32	30	28
	29	32	24	27
	34	35	29	26
	36	35	31	28
	31	34	32	26
	31	34	32	27
	32	33	25	26
	33	30	34	30
	35	34	29	29
	30	33	29	31
	30	36	27	28
	21	34	34	31
	33	30	32	30
	30	36	37	27
rep2	32	33	28	30
	32	37	28	29
	30	40	33	34
	35	37	30	33
	29	36	32	30
	36	32	35	30
	31	37	28	28
	33	32	29	28
	37	32	27	30
	32	33	35	30
	36	32	29	32
	35	35	25	35
	32	32	30	32
	30	32	26	33
	33	33	25	32
	34	32	31	29
	35	35	28	31
	34	31	31	31
	31	32	31	30
	30	34	31	31
	32	33	29	30
	35	30	31	33
	33	33	33	34
rep3	34	33	29	31
	31	33	28	32
	34	35	28	27
	32	30	29	31
	32	32	28	26
	34	32	29	28
	29	30	29	27
	31	34	33	26
	30	32	27	32
	31	33	29	29
	35	32	32	31
	30	33	31	28
	33	32	28	28
	32	32	33	31
	31	31	27	33
	33	32	32	28
	32	36	28	29
	33	35	32	31

30	30	31	28
34	36	29	32
34	35	29	29
33	34	30	31
32	30	27	28

**Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00**  
**Core Diameter (mm)**

	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>
Mean	32.36232	33.08696	29.56522	29.5942
Standard Error	0.282308	0.259302	0.324135	0.362523
Median	32	33	29	30
Mode	34	32	29	28
Standard Deviation	2.345026	2.153923	2.692464	3.011345
Sample Variance	5.499147	4.639386	7.249361	9.068201
Kurtosis	6.81485	0.337858	0.052741	12.47043
Skewness	-1.537007	0.529926	0.242597	-2.328619
Range	16	11	13	22
Minimum	21	29	24	13
Maximum	37	40	37	35
Sum	2233	2283	2040	2042
Count	69	69	69	69

**Anova: Two-Factor With Replication**

SUMMARY	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	Total
<i>rep1</i>					
Count	23	23	23	23	92
Sum	736	758	677	651	2822
Average	32	32.95652	29.43478	28.30435	30.67391
Variance	9	4.588933	10.98419	15.85771	13.34305
<i>rep2</i>					
Count	23	23	23	23	92
Sum	757	773	685	715	2930
Average	32.91304	33.6087	29.78261	31.08696	31.84783
Variance	4.901186	5.794466	7.72332	3.719368	7.646918
<i>rep3</i>					
Count	23	23	23	23	92
Sum	740	752	678	676	2846
Average	32.17391	32.69565	29.47826	29.3913	30.93478
Variance	2.604743	3.494071	3.624506	4.339921	5.709986
<i>Total</i>					
Count	69	69	69	69	275
Sum	2233	2283	2040	2042	
Average	32.36232	33.08696	29.56522	29.5942	
Variance	5.499147	4.639386	7.249361	9.068201	

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	69.91304	2	34.95852	5.473901	0.004685	3.029982
Varieties	700.5942	3	233.5314	36.56908	8.5E-20	2.638799
Interaction	43.18841	6	7.198068	1.127158	0.346723	2.133007
Within	1685.913	264	6.386034			
Total	2499.609	275				

Trial #4 Mcphearson Lot7 south, Salinas, California Evaluated 08/16/00

Core Diameter (mm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
<i>rep1</i>			
Count	23	23	46
Sum	736	758	1494
Average	32	32.95652	32.47826
Variance	9	4.588933	6.877295
<i>rep2</i>			
Count	23	23	46
Sum	757	773	1530
Average	32.91304	33.6087	33.26087
Variance	4.901188	5.794468	5.352657
<i>rep3</i>			
Count	23	23	46
Sum	740	752	1492
Average	32.17391	32.69565	32.43478
Variance	2.604743	3.494071	3.051208
<i>Total</i>			
Count	69	69	
Sum	2233	2283	
Average	32.36232	33.08696	
Variance	5.499147	4.639386	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	19.88406	2	9.942029	1.963315	0.144471	3.064756
Varieties	18.11594	1	18.11594	3.577468	0.060759	3.912874
Interaction	1.101449	2	0.550725	0.108755	0.89703	3.064756
Within	668.4348	132	5.0639			
Total	707.5362	137				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>Rep1</i>			
Count	23	23	46
Sum	758	677	1435
Average	32.95652	29.43478	31.19565
Variance	4.588933	10.98419	10.78309
<i>Rep2</i>			
Count	23	23	46
Sum	773	685	1458
Average	33.6087	29.78261	31.69565
Variance	5.794466	7.72332	10.34976
<i>Rep3</i>			
Count	23	23	46
Sum	752	678	1430
Average	32.69565	29.47826	31.08696
Variance	3.494071	3.624506	6.125604
<i>Total</i>			
Count	69	69	
Sum	2283	2040	
Average	33.08696	29.56522	
Variance	4.639386	7.249361	

**Trial #4 Mcphearson Lot7 south, Salinas, California Evaluated 08/16/00**

Core Diameter (mm)

**ANOVA**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Reps	9.695652	2	4.847826	0.803297	0.450027	3.064756
Varieties	427.8913	1	427.8913	70.90263	5.5E-14	3.912874
Interaction	2.130435	2	1.065217	0.176509	0.838389	3.064756
Within	796.6087	132	6.034914			
Total	1236.326	137				

Anova: Two-Factor With Replication

<i>SUMMARY</i>	<i>Diamond</i>	<i>Durango</i>	<i>Total</i>
<i>Rep1</i>			
Count	23	23	46
Sum	651	758	1409
Average	28.30435	32.95652	30.63043
Variance	15.85771	4.588933	15.52705
<i>Rep2</i>			
Count	23	23	46
Sum	715	773	1488
Average	31.08696	33.6087	32.34783
Variance	3.719368	5.794466	6.276329
<i>Rep3</i>			
Count	23	23	46
Sum	676	752	1428
Average	29.3913	32.69565	31.04348
Variance	4.339921	3.494071	6.62029
<i>Total</i>			
Count	69	69	
Sum	2042	2283	
Average	29.5942	33.08696	
Variance	9.068201	4.639386	

**ANOVA**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>P-value</i>	<i>F crit</i>
Reps	73.92754	2	36.98377	0.003618	3.064756
Varieties	420.8768	1	420.8768	2.15E-13	3.912874
Interaction	26.71014	2	13.35507	0.124081	3.064756
Within	831.4783	132	6.299078		
Total	1352.993	137			

Trial #1 Panzierra Lot22, Salinas, California, Evaluated 09/13/00  
Head Diameter (cm)

	Wrangler	Durango	Silverado	Diamond
rep 1	23	15	17	16
	16	16	18	16
	18	16	17	16
	17	15	18	15
	17	15	16	16
	15	18	18	17
	17	16	17	19
	17	18	17	18
	18	18	15	15
	17	15	15	15
	18	16	15	18
	15	16	14	16
	12	18	17	17
	16	17	17	17
	16	17	16	17
	18	15	16	15
	16	17	17	17
	16	17	16	16
	17	17	17	15
	18	15	16	14
	16	17	18	18
	17	17	16	17
	16	16	18	16
Rep2	15	18	15	17
	16	18	16	18
	17	19	17	16
	16	18	16	18
	17	16	16	19
	18	17	15	18
	17	16	18	18
	18	18	16	19
	17	16	16	18
	20	17	17	17
	18	16	19	18
	16	16	18	18
	19	16	16	16
	17	16	16	18
	18	17	16	18
	16	18	15	18
	17	17	18	17
	19	17	17	17
	18	17	15	17
	18	16	18	16
	18	17	17	17
	17	18	15	15
	18	17	15	16
	15	18	18	17
	16	16	18	17

	Wrangler	Durango	Silverado	Diamond
Mean	17.02083	16.70833	16.54167	16.85417
Standard Error	0.22965	0.148749	0.168321	0.173587
Median	17	17	16.5	17
Mode	17	16	16	17
Standard Deviation	1.59108	1.030561	1.16616	1.202649
Sample Variance	2.531472	1.062057	1.359929	1.446365
Kurtosis	4.776242	-0.775563	-0.840899	-0.553286
Skewness	0.526766	0.017608	-0.020902	-0.243913
Range	11	4	5	5
Minimum	12	15	14	14
Maximum	23	19	19	19
Sum	817	802	794	809
Count	48	48	48	48

Trial #1 Panzierra Lot22, Salinas, California Evaluated 09/13/00

Head Diameter (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
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*rep 1*

Count	24	24	24	24	96
Sum	401	395	396	393	1585
Average	16.70833	16.45833	16.5	16.375	16.51042
Variance	3.606884	1.21558	1.304348	1.461957	1.852522

*rep 2*

Count	24	24	24	24	96
Sum	416	407	398	416	1637
Average	17.33333	16.95833	16.58333	17.33333	17.05208
Variance	1.362319	0.824275	1.471014	1.014493	1.228838

*Total*

Count	48	48	48	48	
Sum	817	802	794	809	
Average	17.02083	16.70833	16.54167	16.85417	
Variance	2.531472	1.062057	1.369929	1.446365	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	14.08333	1	14.08333	9.189125	0.002786	3.892495
Varieties	6.020833	3	2.006944	1.309496	0.272729	2.653692
Interaction	4.708333	3	1.569444	1.024035	0.383224	2.653692
Within	282	184	1.532609			
Total	306.8125	191				

Trial #2 Wilder Lot 19, Salinas, California Evaluated 09/13/00  
 Head Diameter (cm)

	Wrangler	Durango	Silverado	Diamond
Rep1	15	19	18	16
	16	16	15	18
	15	18	14.5	18
	16	20	15	17
	15	18	14	17
	17	17	16	17
	15	18	14	17
	15	18	16	16
	15	19	16	17
	15	18	15	17
	17	19	16	15
	17	18	15	17
	15	18	18	16
	15	18	18	14
	18	15	16	16
	16	16	15	17
	18	16	16	15
	12	18	17	15
	17	19	17	16
	18	19	15	16
	17	15	15	14
	17	16	14	16
	15	16	14	17
Rep2	17	18	15	16
	15	15	17	16
	16	15	15	16
	15	14	19	14
	17	16	15	16
	17	15	16	17
	17	17	17	16
	17	17	16	17
	15	16	15	16
	16	15	15	16
	14	16	16	15
	17	15	15	16
	14	16	15	16
	16	16	15	16
	15	16	16	17
	19	16	16	16
	15	17	16	18
	14	15	16	16
	15	15	16	14
	17	17	16	17
	15	17	17	16
	16	16	17	15
	17	16	16	17
	17	15	15	15
	16	15	18	15
Rep3	16	16	15	17
	17	15	16	15
	15	17	15	13
	18	15	16	15
	15	16	15	15
	16	15	16	15
	16	16	15	16
	15	16	14	16
	16	15	15	16
	14	18	15	15
	16	16	14	17
	16	16	14	16
	15	17	15	15
	15	16	14	15
	15	15	16	18
	15	16	15	17
	16	18	15	16
	16	14	16	17

16	15	14	17
16	12	15	15
17	15	14	15
15	17	15	14
14	16	16	15
17	15	17	15

	Wrangler	Durango	Silverado	Diamond
Mean	15.86111	16.34722	15.57639	15.94444
Standard Error	0.141678	0.172616	0.131449	0.12648
Median	16	16	15	16
Mode	15	16	15	16
Standard Deviation	1.202176	1.464699	1.115384	1.073219
Sample Variance	1.445227	2.145344	1.244083	1.1518
Kurtosis	0.589808	0.191049	0.542132	-0.173931
Skewness	-0.075481	0.199718	0.765784	-0.238587
Range	7	8	5	5
Minimum	12	12	14	13
Maximum	19	20	19	18
Sum	1142	1177	1121.5	1148
Count	72	72	72	72

**Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00**

Head Diameter (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep 1</i>					
Count	24	24	24	24	96
Sum	383	422	374.5	390	1569.5
Average	15.9583333	17.58333	15.60417	16.25	16.34896
Variance	1.954710145	1.905797	1.586504	1.152174	2.163788
<i>rep 2</i>					
Count	24	24	24	24	96
Sum	382	378	385	383	1528
Average	15.91666667	15.75	16.04167	15.95833	15.91667
Variance	1.557971014	0.717391	1.085145	0.911232	1.045614
<i>rep 3</i>					
Count	24	24	24	24	96
Sum	377	377	362	375	1491
Average	15.70833333	15.70833	15.08333	15.625	15.53125
Variance	0.911231884	1.606884	0.688406	1.268043	1.156908
<i>Total</i>					
Count	72	72	72	72	
Sum	1142	1177	1121.5	1148	
Average	15.86111111	16.34722	15.57639	15.94444	
Variance	1.445226917	2.145344	1.244083	1.1518	

ANOVA	SS	df	MS	F	P-value	F crit
Reps	32.13020833	2	16.0651	12.54638	6.09E-06	3.028489
Varieties	21.89149306	3	7.297164	5.698873	0.000847	2.637307
Interaction	39.50173811	6	6.583823	5.141618	4.99E-05	2.1315
Within	353.40625	276	1.280457			
Total	446.9296875	287				

Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00

Head Diameter (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
<i>rep1</i>			
Count	24	24	48
Sum	383	422	805
Average	15.95833333	17.58333	16.77083
Variance	1.954710145	1.905797	2.563387
<i>rep2</i>			
Count	24	24	48
Sum	382	378	760
Average	15.91666667	15.75	15.83333
Variance	1.557971014	0.717391	1.120567
<i>rep 3</i>			
Count	24	24	48
Sum	377	377	754
Average	15.70833333	15.70833	15.70833
Variance	0.911231884	1.606884	1.23227
<i>Total</i>			
Count	72	72	
Sum	1142	1177	
Average	15.86111111	16.34722	
Variance	1.445226917	2.145344	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	32.375	2	16.1875	11.22315	3.05E-05	3.061714
Varieties	8.506944444	1	8.506944	5.898053	0.016445	3.909733
Interaction	23.51388889	2	11.75694	8.15135	0.000451	3.061714
Within	199.04166667	138	1.442331			
Total	263.4375	143				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>Rep1</i>			
Count	24	24	48
Sum	422	374.5	796.5
Average	17.58333333	15.60417	16.59375
Variance	1.905797101	1.586504	2.709109
<i>Rep2</i>			
Count	24	24	48
Sum	378	385	763
Average	15.75	16.04167	15.89583
Variance	0.717391304	1.085145	0.903812
<i>Rep3</i>			
Count	24	24	48
Sum	377	362	739
Average	15.70833333	15.08333	15.39583
Variance	1.606884058	0.688406	1.222981
<i>Total</i>			
Count	72	72	
Sum	1177	1121.5	
Average	16.34722222	15.57639	
Variance	2.145344288	1.244083	

Trial #2 Wilder Lot19, Salinas, California Evaluated 09/13/00

Head Diameter (cm)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	34.75347222	2	17.37674	13.73632	3.63E-06	3.061714
Varieties	21.390625	1	21.39063	16.9093	6.7E-05	3.909733
Interaction	31.32291667	2	15.66146	12.38039	1.13E-05	3.061714
Within	174.5729167	138	1.265021			
Total	262.0399306	143				

## Anova: Two-Factor With Replication

## SUMMARY

## Rep1

	Diamond	Durango	Total
Count	24	24	48
Sum	390	422	812
Average	16.25	17.58333	16.91667
Variance	1.152173913	1.905797	1.950355

## Rep2

	Diamond	Durango	Total
Count	24	24	48
Sum	383	378	761
Average	15.9583333	15.75	15.85417
Variance	0.911231884	0.717391	0.808067

## Rep3

	Diamond	Durango	Total
Count	24	24	48
Sum	375	377	752
Average	15.625	15.70833	15.66667
Variance	1.288043478	1.606884	1.41844

## Total

	Diamond	Durango	Total
Count	72	72	
Sum	1148	1177	
Average	15.9444444	16.34722	
Variance	1.151799687	2.145344	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	43.625	2	21.8125	17.26237	2.04E-07	3.061714
Varieties	5.840277778	1	5.840278	4.621983	0.033308	3.909733
Interaction	16.09722222	2	8.048611	6.369654	0.00226	3.061714
Within	174.375	138	1.263587			
Total	239.9375	143				

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Head Diameter (cm)

	Wrangler	Durango	Silverado	Diamond
rep1	17	16.5	15	14.5
	16.5	18.5	14	17
	17	14	14	14
	14	17	14	15
	16	16.5	15	14
	14.5	18.5	14	14.5
	17.5	15	14	17
	15	15	14	15.5
	14	16	13.5	14.5
	14	17.5	13	14
	15.5	16	14	14.5
	14	17	16	14
	16.5	15.5	14	15
	18	16	14	14.5
	16.5	16.5	14.5	14.5
	16	16	13.5	14
	16	17	17	15
	17	17	14.5	15
	15.5	18	14.5	16
	19.5	16	15	14
rep2	15.5	15	14	14.5
	15.5	16	16	14.5
	15	16	13.5	16
	15	14	15.5	16
	15.5	14	15	14.5
	14.5	18.5	15.5	16.5
	16	17	15.5	16.5
	16.5	14.5	14	17.5
	15	14.5	15.5	16
	19	16	15	17
	14.5	15	16.5	16.5
	15	18	15.5	15.5
	14.5	14	15	16
	16.5	18	15	16.5
	15	17.5	16	16
	15	16	15	14
	16	16	16.5	15
	15	15	15.5	15.5
	15.5	17	15	15
	15	17	16	15
rep3	16	15	18	14.5
	15.5	16	14.5	16
	16	17	17.5	17
	15	16	15	15
	15	17	15.5	16
	16	14.5	14.5	15.5
	17	15.5	16	13.5
	17	16.5	16.5	15.5
	15.5	16.5	15.5	14
	16	15	15.5	15.5
	17.5	15.5	16	14
	15	16.5	14	14.5
	17	16	15.5	14.5
	18	16	16	17
	17	15	15.5	16
	17.5	15.5	14	14.5
	16	15	15.5	15.5
	19	16	15.5	14.5
	16	16.5	15	17.5
	16	16.5	15	15.5

**Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00**  
**Head Diameter (cm)**

	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>
Mean	15.95833	16.06667	15.05833	15.275
Standard Error	0.161338	0.143339	0.131319	0.133099
Median	16	16	15	15
Mode	16	16	14	14.5
Standard Deviation	1.249717	1.110301	1.01719	1.030982
Sample Variance	1.561794	1.232768	1.034675	1.062924
Kurtosis	0.505183	-0.310011	0.277131	-0.773698
Skewness	0.751431	0.076034	0.448645	0.442228
Range	5.5	4.5	5	4
Minimum	14	14	13	13.5
Maximum	19.5	18.5	18	17.5
Sum	957.5	964	903.5	916.5
Count	60	60	60	60

**Anova: Two-Factor With Replication**

<i>SUMMARY</i>	<i>Wrangler</i>	<i>Durango</i>	<i>Silverado</i>	<i>Diamond</i>	Total
<i>rep1</i>					
Count	20	20	20	20	80
Sum	320	329.5	287.5	296.5	1233.5
Average	16	16.475	14.375	14.825	15.41875
Variance	2.210526	1.328289	0.8125	0.849342	1.983821
<i>rep2</i>					
Count	20	20	20	20	80
Sum	309.5	317	305.5	314	1246
Average	15.475	15.85	15.275	15.7	15.575
Variance	1.038816	1.713158	0.617763	0.878947	1.070253
<i>rep3</i>					
Count	20	20	20	20	80
Sum	328	317.5	310.5	306	1262
Average	16.4	15.875	15.525	15.3	15.775
Variance	1.147368	0.523026	1.0125	1.168421	1.100633
<i>Total</i>					
Count	60	60	60	60	
Sum	957.5	964	903.5	916.5	
Average	15.95833	16.06667	15.05833	15.275	
Variance	1.561794	1.232768	1.034675	1.062924	

**ANOVA**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Reps	5.102083	2	2.551042	2.301578	0.102422	3.035439
Varieties	44.68646	3	14.89549	13.43887	4.17E-08	2.844192
Interaction	30.82292	6	5.137153	4.634796	0.000182	2.138492
Within	252.7125	228	1.108388			
Total	333.324	239				

## Durango PVP Worksheets

Trial #3, Cooper Lot2, Salinas, California, Evaluated 08/14/00

Head Diameter (cm)

Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Total
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*rep1*

Count	20	20	40
Sum	320	329.5	649.5
Average	16	16.475	16.2375
Variance	2.210526	1.328289	1.781891

*rep2*

Count	20	20	40
Sum	309.5	317	626.5
Average	15.475	15.85	15.6625
Variance	1.036816	1.713158	1.376763

*rep3*

Count	20	20	40
Sum	328	317.5	645.5
Average	16.4	15.875	16.1375
Variance	1.147368	0.523026	0.884455

*Total*

Count	60	60	
Sum	957.5	964	
Average	15.95833	16.06667	
Variance	1.561794	1.232768	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	7.55	2	3.775	2.845054	0.062267	3.075854
Varieties	0.352083	1	0.352083	0.26535	0.607466	3.924328
Interaction	6.066667	2	3.033333	2.286092	0.106306	3.075854
Within	151.2625	114	1.326864			
<b>Total</b>	<b>165.2313</b>	<b>119</b>				

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
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*Rep1*

Count	20	20	40
Sum	329.5	287.5	617
Average	16.475	14.375	15.425
Variance	1.328289	0.8125	2.173718

*Rep2*

Count	20	20	40
Sum	317	305.5	622.5
Average	15.85	15.275	15.5625
Variance	1.713158	0.617763	1.220353

*Rep3*

Count	20	20	40
Sum	317.5	310.5	628
Average	15.875	15.525	15.7
Variance	0.523026	1.0125	0.779487

*Total*

Count	60	60	
Sum	964	903.5	
Average	16.06667	15.05833	
Variance	1.232768	1.034675	

Trial #3 Cooper Lot2, Salinas, California Evaluated 08/14/00

Head Diameter (cm)

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	1.5125	2	0.75625	0.755339	0.472188	3.075854
Varieties	30.50208	1	30.50208	30.46534	2.16E-07	3.924328
Interaction	18.12917	2	9.064583	9.053663	0.000224	3.075854
Within	114.1375	114	1.001206			
Total	164.2813	119				

## Anova: Two-Factor With Replication

SUMMARY Diamond Durango Total

Rep1

Count	20	20	40
Sum	296.5	329.5	626
Average	14.825	16.475	15.65
Variance	0.849342	1.328289	1.758974

Rep2

Count	20	20	40
Sum	314	317	631
Average	15.7	15.85	15.775
Variance	0.878947	1.713158	1.26859

Rep3

Count	20	20	40
Sum	306	317.5	623.5
Average	15.3	15.875	15.5875
Variance	1.168421	0.523026	0.908814

Total

Count	60	60
Sum	916.5	964
Average	15.275	16.06667
Variance	1.062924	1.232768

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	0.729167	2	0.364583	0.33856	0.71351	3.075854
Varieties	18.80208	1	18.80208	17.46003	5.77E-05	3.924328
Interaction	11.95417	2	5.977083	5.550453	0.005009	3.075854
Within	122.7625	114	1.076664			
Total	164.2479	119				

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00

Head Diameter (cm)	Wrangler	Durango	Silverado	Diamond
rep1	14	14	15	15.5
	17	15	15	16
	15	15	15.5	17.5
	20	16.5	14	14
	17	17	15	16
	16	15	16.5	14
	15	15.5	14.5	14.5
	16	16.5	18.5	16.5
	16	18	15.5	14
	18	18	17	14
	15	17.5	14	17
	15.5	16	14	15
	16	18	15.5	16
	17	18	15	15
	14.5	16	17	18
	16	15	14	14
	18	16	16.5	16
	16	14	14	14.5
	15	17	15.5	16.5
	16.5	17	15	15.5
	13	15.5	17	14.5
	16.5	16.5	15	14
	15	17	16.5	16
	16	15	16	15
	15	16	15	17
	14.5	14	16	15
	17	16	16	17
	15.5	16	15	17
	17.5	15	16.5	16.5
	15	16.5	17	15
	14.5	15	17	15.5
	16.5	15	14	17.5
	15	15	16	17.5
	15	14.5	16	16
	18	17.5	16	17
	16	15.5	16	17
	15.5	14.5	15.5	16
	15	15.5	15	17
	15	15.5	14.5	16
	16	15	17	16
	15.5	16.5	16	17
	16.5	14.5	15.5	15.5
	17	17	16	15.5
	14	15	15	14
	15	14	16	17
	15	14.5	14.5	16
	16	15	16	14.5
	15.5	15	16.5	17
	17	14.5	16	15.5
	15	15	15.5	17
	14	15	16	14.5
	15.5	16.5	15	16
	15	15.5	15	16
	14.5	17	14	16
	16	14.5	15	16.5
	177	16.5	16.5	15
	17	15.5	17	14.5
	15	14.5	13	15
	14	14.5	16	15.5
	16	16	15.5	17
	14	15	16	16
	16	17	15	15.5
	15	15.5	16	16
	16	16	15.5	17
	16	17.5	14	16
	16	16	15	16

## Durango PVP Worksheets

17	16	16	16
16.5	15.5	15	16
15	14	15	16.5

Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00  
Head Diameter (cm)

	Wrangler	Durango	Silverado	Diamond
Mean	15.69565	15.71739	15.52899	15.82609
Standard Error	0.133489	0.132392	0.118999	0.125086
Median	16	16.5	15.5	16
Mode	15	15	15	16
Standard Deviation	1.108846	1.099727	0.988478	1.03904
Sample Variance	1.22954	1.209399	0.977089	1.079604
Kurtosis	2.355037	-0.656859	0.331987	-0.775403
Skewness	0.71131	0.423107	0.081865	-0.186782
Range	7	4	5.5	4
Minimum	13	14	13	14
Maximum	20	18	18.5	18
Sum	1083	1084.5	1071.5	1092
Count	69	69	69	69

## Anova: Two-Factor With Replication

SUMMARY	Wrangler	Durango	Silverado	Diamond	Total
<i>rep1</i>					
Count	23	23	23	23	92
Sum	366	374	355.5	354	1449.5
Average	15.91304	16.26087	15.45652	15.3913	15.75543
Variance	1.992095	1.54249	1.475296	1.476285	1.695025
<i>rep2</i>					
Count	23	23	23	23	92
Sum	358	353	361.5	373	1445.5
Average	15.56622	15.34783	15.71739	16.21739	15.71196
Variance	0.802372	0.850791	0.655138	0.882411	0.87491
<i>rep3</i>					
Count	23	23	23	23	92
Sum	519	357.5	354.5	365	1596
Average	22.56522	15.54348	15.41304	15.86957	17.34783
Variance	1134.211	0.86166	0.833004	0.618577	283.9656
<i>Total</i>					
Count	69	69	69	69	
Sum	1243	1084.5	1071.5	1092	
Average	18.01449	15.71739	15.52899	15.82609	
Variance	378.3821	1.209399	0.977089	1.079604	

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	159.8859	2	79.94293	0.836952	0.434174	3.029982
Varieties	282.5399	3	94.17995	0.986004	0.39985	2.638799
Interaction	575.7591	6	95.95984	1.004638	0.42263	2.133007
Within	25216.43	264	95.5168			
Total	26234.62	275				

## Durango PVP Worksheets

Trial #4 Mcphearson Lot7 south, Salinas, California Evaluated 08/16/00

Head Diameter (cm)

Anova: Two-Factor With Replication

SUMMARY Wrangler Durango Totalrep1

Count	23	23	46
Sum	366	374	740
Average	15.91304	16.26087	16.08696
Variance	1.992095	1.54249	1.758937

rep2

Count	23	23	46
Sum	358	353	711
Average	15.56522	15.34783	15.45652
Variance	0.802372	0.850791	0.82029

rep3

Count	23	23	46
Sum	519	357.5	876.5
Average	22.56522	15.54348	19.05435
Variance	1134.211	0.86166	567.5248

Total

Count	69	69	
Sum	1243	1084.5	
Average	18.01449	15.71739	
Variance	378.3821	1.209399	

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	339.5906	2	169.7953	0.893455	0.4117	3.064756
Columns	182.0453	1	182.0453	0.957914	0.329503	3.912874
Interaction	386.8949	2	193.4475	1.017912	0.364167	3.064756
Within	25085.74	132	190.0435			
Total	25994.27	137				

Anova: Two-Factor With Replication

SUMMARY Durango Silverado Total

Count	23	23	46
Sum	374	355.5	729.5
Average	16.26087	15.45652	15.8587
Variance	1.54249	1.475296	1.6407

Count	23	23	46
Sum	353	361.5	714.5
Average	15.34783	15.71739	15.53261
Variance	0.850791	0.655138	0.771135

Count	23	23	46
Sum	357.5	354.5	712
Average	15.54348	15.41304	15.47826
Variance	0.86166	0.833004	0.83285

Total

Count	69	69	
Sum	1084.5	1071.5	
Average	15.71739	15.52899	
Variance	1.209399	0.977089	

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## Durango PVP Worksheets

**Trial #4 Mcpearson Lot7 south, Salinas, California Evaluated 08/16/00**

Head Diameter (cm)

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	3.894928	2	1.947464	1.879072	0.156794	3.064756
Columns	1.224638	1	1.224638	1.18163	0.279005	3.912874
Interaction	7.981884	2	3.990942	3.850787	0.023692	3.064756
Within	136.8043	132	1.036397			
Total	149.9058	137				

Anova: Two-Factor With Replication

## SUMMARY Diamond Durango Total

Count	23	23	46
Sum	354	374	728
Average	15.3913	16.26087	15.82609
Variance	1.476285	1.54249	1.669082

Count	23	23	46
Sum	373	353	726
Average	16.21739	15.34783	15.78261
Variance	0.882411	0.850791	1.04058

Count	23	23	46
Sum	365	357.5	722.5
Average	15.86957	15.54348	15.70652
Variance	0.618577	0.86166	0.750845

*Total*

Count	69	69
Sum	1092	1084.5
Average	15.82609	15.71739
Variance	1.079604	1.209399

## ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Sample	0.336957	2	0.168478	0.162201	0.85044	3.064756
Columns	0.407609	1	0.407609	0.392421	0.532111	3.912874
Interaction	18.20852	2	9.103261	8.764072	0.000267	3.064756
Within	137.1087	132	1.038702			
Total	156.0598	137				

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## Durango PVP trial # 5 Pybas Seed Field

Lost Hills, CA Evaluated:08/09/00

<b>Frame Spread (cm)</b>		
	Durango	Silverado
rep 1	41.5	41
	43	36.5
	43.5	40.5
	46	37
	43	38
	44	39.5
	44.5	36
	40	42.5
	47.5	35
	38.5	36.5
rep 2	39	33.5
	40.5	48
	38.5	38.5
	45.5	39
	38	37
	37	39.5
	38.5	38
	41.5	40
	41	43
	45	36.5
rep 3	43.5	38
	41	44
	39	43
	43.5	40.5
	45.5	41
	42.5	34.5
	40.5	39
	42.5	37.5
	39	41.5
	41	43

	Durango	Silverado
Mean	41.8	39.25
Standard Error	0.496887	0.57971
Median	41.5	39
Mode	43.5	36.5
Standard Deviation	2.721561	3.1752
Sample Variance	7.406897	10.0819
Kurtosis	-0.82464	0.587754
Skewness	0.167919	0.56653
Range	10.5	14.5
Minimum	37	33.5
Maximum	47.5	48
Sum	1254	1177.5
Count	30	30

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## Durango PVP trial # 5 Pybas Seed Field

Lost Hills, CA Evaluated:08/09/00

## Frame Spread (cm)

Anova: Two-Factor With Replication

## SUMMARY Durango Silverado Total

*rep 1*

Count	10	10	20
Sum	431.5	382.5	814
Average	43.15	38.25	40.7
Variance	7.113889	6.180556	12.61579

*rep 2*

Count	10	10	20
Sum	404.5	393	797.5
Average	40.45	39.3	39.875
Variance	8.358333	15.45556	11.62829

*rep 3*

Count	10	10	20
Sum	418	402	820
Average	41.8	40.2	41
Variance	4.344444	8.733333	6.868421

*Total*

Count	30	30
Sum	1254	1177.5
Average	41.8	39.25
Variance	7.406897	10.0819

## ANOVA Frame Spread: Durango vs Silverado

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	13.575	2	6.7875	0.811479	0.449543	3.168246
Varieties	97.5375	1	97.5375	11.66109	0.001218	4.01954
Interaction	41.925	2	20.9625	2.506171	0.091028	3.168246
Within	451.675	54	8.364352			
Total	604.7125	59				

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**Durango PVP trial # 5 Pybas Seed Field****Lost Hills, CA Evaluated:08/09/00**

<b>Seedstalk Height (cm)</b>		
	<b>Durango</b>	<b>Silverado</b>
rep 1	100	104.5
	108.5	110
	98.5	112
	97.5	103.5
	127	116
	115	105
	112	107
	115.5	103
	103	106.5
	122.5	103.5
	117	111
	117	109
rep 2	102.5	110.5
	118.5	118.5
	126	113.5
	96	117
	106.5	120
	123.5	122
	102	112.5
	106.5	105.5
	127.5	108.5
	106.5	113
	122	121
	116.5	128
rep 3	126.5	126
	123.5	94
	111	106.5
	108	113.5
	122	116
	115	118.5
	115	111
	122	118
	116.5	120
	126.5	122
	106.5	105.5
	127.5	108.5

	<b>Durango</b>	<b>Silverado</b>
Mean	113.1167	111.85
Standard Error	1.773153	1.379061
Median	115	111.5
Mode	106.5	103.5
Standard Deviation	9.711958	7.55343
Sample Variance	94.32213	57.05431
Kurtosis	-1.18959	0.075579
Skewness	-0.15842	0.108623
Range	31.5	34
Minimum	96	94
Maximum	127.5	128
Sum	3393.5	3355.5
Count	30	30

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**Durango PVP trial # 5 Pybas Seed Field****Lost Hills, CA Evaluated:08/09/00****Seedstalk Height (cm)**

Anova: Two-Factor With Replication

SUMMARY	Durango	Silverado	Total
<i>rep 1</i>			
Count	10	10	20
Sum	1099.5	1071	2170.5
Average	109.95	107.1	108.525
Variance	104.9139	18.43333	60.56513
<i>rep 2</i>			
Count	10	10	20
Sum	1115.5	1139.5	2255
Average	111.55	113.95	112.75
Variance	102.8028	27.80278	63.38158
<i>rep 3</i>			
Count	10	10	20
Sum	1178.5	1145	2323.5
Average	117.85	114.5	116.175
Variance	57.44722	99.83333	77.45461
<i>Total</i>			
Count	30	30	
Sum	3393.5	3355.5	
Average	113.1167	111.85	
Variance	94.32213	57.05431	

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Reps	587.3583	2	293.6792	4.284855	0.018741	3.168246
Varieties	24.06667	1	24.06667	0.351139	0.555943	4.01954
Interaction	101.4583	2	50.72917	0.740152	0.481818	3.168246
Within	3701.1	54	68.53889			
Total	4413.983	59				

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICEEXHIBIT E  
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

## 1. NAME OF APPLICANT(S)

*Beheer*

ENZA ZADEN, De Enkhuizer Zaadhandel BV

RAD  
S/9/05

## 4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)

Postbus 7, 1600 AA Enkhuizen  
Haling 1e, 1602 DB Enkhuizen  
The Netherlands2. TEMPORARY DESIGNATION  
OR EXPERIMENTAL NUMBER

# 962 A

## 3. VARIETY NAME

Durango

## 5. TELEPHONE (include area code)

USA: 831 623-4644  
NL: +31 228-315844

## 6. FAX (include area code)

USA: 831 623-1746  
NL: +31 228-315854

## 7. PVPO NUMBER

200200046

## 8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.

 YES  NO

## 9. Is the applicant (individual or company) a U.S. national or U.S. based company?

If no, give name of country Holland YES  NO10. Is the applicant the original owner?  YES  NO If no, please answer the following:

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

 YES  NO If no, give name of country \_\_\_\_\_

b. If original rights to variety were owned by a company, is the original owner(s) a U.S. based company?

 YES  NO If no, give name of country \_\_\_\_\_

## 11. Additional explanation on ownership (if needed, use reverse for extra space):

## PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

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To: Robin Davis  
PVP Office  
NAL Building, Room 400  
10301 Baltimore Avenue  
Beltsville, MD 20705

Date: May 4, 2005

Subject: payments

---

Dear Robin Davis,

I've enclosed two checks:

Check #6618, \$190.- (5x\$38.-)

To change applicants name from Enza Zaden De Enkhuizer Zaadhinkel B.V. to Enza Zaden Beheer B.V.  
for the following numbers:

- 1) PVP# 9900259 (Ponderosa)
- 2) PVP#200100226 (Coastal Star)
- 3) PVP#200200046 (Durango)
- 4) PVP#200300168 (Telluride)
- 5) Added: PVP#9900254 (Silverado)

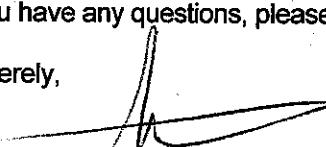
Addresses, etc. remain the same.

Check #6577, \$432.-

payment certificate pvp# 9900259. I thought that we already sent this check but that was not the case.

If you have any questions, please do not hesitate to contact us.

Sincerely,



Aernoudt Aardse  
Enza Zaden Research USA

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Mobile: 831-710-0605  
Email: [a.aardse@coastalseeds.com](mailto:a.aardse@coastalseeds.com)